PAGE 6 PUBLISHING's

NEW ATARI USER

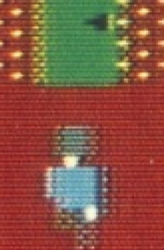
Issue 57 £1.95

August/September

XL/XE

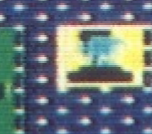
DOUBLE AGENTS

a new game from Bill Halsall



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180

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ON CUE

Control that cue ball.! A challenging real life simulation which combines Pool and Snooker on the same cassette. An absolute must for both enthusiasts and beginners alike. Greatly addictive



GHOSTBUSTERS

Has anybody seen a ghost? Matter of fact yes they have! At this very moment hundreds of ghosts are making their way to the infamous spook central. Only you can save the world from a disaster of biblical proportions. So go and show 'em how you do it!



NINJA

Blasts the belt off all other martial arts games! That's all it says on the inlay! Someone sure reckons this is the best punching, kicking, ducking and diving game around



ROCKFORD

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ROGUE

You are the ROGUE. Your mission is to search the Dungeons of Doom for the Amulet of Yendor. In the dungeons you will find many things to aid the quest for the Amulet. You will also encounter fearsome monsters and fiendish traps that will challenge all your skills



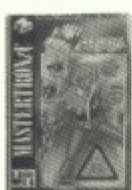
UNIVERSAL HERO

Only seven seconds left to save the planet! Universal Hero has to save his skin and everybody else's by finding bits to repair a shuttle to get to a planet to pick up the spares to mend a space freighter which is out of control and about to blow him and his chances of getting back to earth to atoms. A nail biting, multi-dimensional, hi-res Arcade Adventure!



HENRY'S HOUSE

Little Henry has shrunk. He must navigate his way through the royal household to find the cure. Avoiding all the obstacles in his path, from terrible toothbrushes, through pestiferous parrots and chefs chasing chickens, to a final encounter with the vicious vampire! Acknowledged by all reviewers as one of the best Atari games



BOMB FUSION

A terrorist gang has planted bombs throughout the Sellerscale Nuclear Processing Plant and you, as ex super hero (ex after the 'Boris Affair') have to go in and save the plant and possibly the Northern Hemisphere from destruction



MILK RACE

Cycling 1,000 miles is no mean feat - and you could end up feeling pretty exhausted by the time you've finished playing this superb race simulation designed especially in conjunction with the Milk Race



GUN LAW

Four months of bloody alien attacks have taken their toll - all the surviving inhabitants have fled and arson attacks have been made on your weapon stores, they destroyed what you could not carry away. You are left to fight alone against ruthless and bloodthirsty killers with just a single machine gun



REVENGE II

The Mutated 90 foot high, laser spitting death camels have rebelled against their captors the Zzyaxians and are out for revenge! All action, highly graphical shoot-em-up from Jeff Minter



DESPATCH RIDER

Join the growing band of street demons - those fearless horders who terrify the population of the big cities to get the parcels through. Plan your moves to make some money, but don't take too long - time is always short. Gain an instant macho rating and be a despatch rider with this all action simulation



INVASION

Mobilize your units and prepare for battle. This all action space conflict requires skill, strategy and tactics. You must destroy the weather control station in order to win the battle but every move you make the enemy will counter, and they're waiting for you to make just one fatal slip up



LOS ANGELES SWAT

Special Assignment. Rescue the hostages from the terrorist gangs holding out in West L.A. Clean up the streets. Blow away the bad guys and be a hero on network T.V.! Fail and you won't be coming back to watch it. All action joystick bending combat for those with the skill to survive!



SPEED ZONE

Enter the Speedzone in a frantic defence against marauding alien forces. A survey ship sent into the area comes under attack. As an enemy vessel draws closer your "STARFIRE" class attack craft is launched



FEUD

To win at Feud you must "out-spell" your rival Wizard Leanoric. In Kieke's herb garden you will find the ingredients for your spells but tread carefully as strange things can happen in this game of magic and mystery



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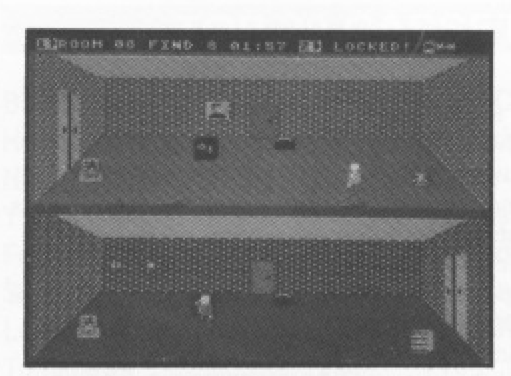
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SUBMISSIONS

PAGE 6 welcomes and encourages its readers to submit, articles, programs and reviews for publication. Programs must be submitted on disk or cassette, articles should wherever possible be submitted as text files on disk. We seek to encourage your participation and do not have strict rules for submissions. If something interests you, write a program or article and submit it! Appropriate payment will be made for all published programs and articles, all payments being made at the end of the second month shown on the cover of the issue concerned.

The next issue of NEW ATARI USER will be on sale 24th September
Editorial copy date is 17th August

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PAGE 6 PUBLISHING's
NEW
ATARI
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Issue 57
August/September 1992
'The Magazine for the Dedicated Atari User'
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THE CREDITS

All of the usual stuff is on page 3 but here are the people who made this issue possible.

Les Ellingham did all the usual this time in much the same way, fretting over whether it would be completed on time, but in the end just carrying on and getting it done. A bit of building and decorating to do before the next one!

Sandy actually went off on holiday on her own but managed to do her stuff before and after to help us keep going

Paulette had her picture taken recently (and secretly enjoyed it) and then started saying that a reader or two had written in asking for her picture in the mag. Sounds a bit unlikely but what do you think, fancy a pose from Paulette in the next one?

The Regular Contributors, who provide the backbone of the magazine and can generally be relied upon to come up with good articles and reviews, are ....

John S Davison	**John Davison jr**
John Sweeney	**Paul Rixon**
Damon Howarth	**Ian Finlayson**
Dion Guy	**The Tipster**

All other contributors for this issue are individually credited alongside their articles or programs. Thanks to everybody for sharing their enthusiasm with other Atari users.

After a complaint about Turboflex and yet another over the Lynx photo (some people don't know how much these front covers cost) we are delighted to have, at last, a decent picture once again from none other than our old friend **Bill Halsall** whose **Double Agents** is featured.

Gotcha with Boo Hewerdine didn't I? Nobody knew the answer but for those interested the CD is All Through The Year, a Hokey Pokey Charity Compilation, featuring some major contemporary folk singers and bands. Highly recommended if this is your scene. Apart from that one inspiration has come this time from Maire Brennan, a solo album that sounded weak at first hearing but grew and grew, Jennifer Warnes with one much better than I thought it would be and Andy Irvine with a rather disappointing Rude Awakening. Annie Lennox was in there too as was Dave Cousins and Brian Willoughby with Old School Songs, fourteen years old and still sounding good! On a lighter note there is David Lanz with a beautiful piano album that I am hoping John Davison is going to mix together with a Thunderstorm for me! The two that have had the most play between issues have been Bruce Cockburn and Buffy St. Marie. The old Incredible String Band had one or two airings too which brings us onto this issue's free CD competition which goes to the first person who can tell me who was the original third member of the ISB and the name of the band he founded when he left. Easy one that, eh!

The next issue of NEW ATARI USER could feature YOUR article or program, so SEND IT IN NOW!

PAGE 6 shows just what you can do with your Atari. NEW ATARI USER has always been created entirely with Atari equipment, initially on the XL but more lately with a Mega ST and other stuff, who needs PC's or Macs! With the exception of the final output on a Linotron and the use of an in-house repro camera for the photos and listings everything is done on the ST. Hardware includes a Mega ST2 (upgraded to 4Mb), SM125 Monitor, Supra 30Mb Hard Disk, an Atari Laser Printer, Citizen 124D printer, Philips CM8833 monitor, 130XE, XF551 disk drive, 810 disk drive, 850 interface, NEC 8023 printer. Principal software used is Protext and Fleet Street Publisher 3.0. Other software includes Kermit, TariTalk, Turbo Basic and various custom written programs on the XL/XE. Articles and programs submitted on XL/XE disks are subjected to various custom written programs before being transferred across to the ST via TARITALK. All major editing is done with Protext and pages are laid out with Fleet Street Publisher. A disk with the finished pages as Postscript files is sent to a typesetting bureau to be output on a Linotron and, hey presto, finished pages are sent back exactly as you see them. It really does work! All that is left is to drop in the listings and photos.
Well, it's not quite as easy as that but you get the idea!

Editorial

I have booked my next holiday for 1995. I know that might be a bit rash but I have this feeling that the recovery that the men in power keep telling us is in hand might actually begin around that time. What is apparent, not only in the computer trade but also in most businesses dealing in 'non-essential' supplies, is that people are no longer spending their money. Most folks are saving every penny they have because nobody has any confidence in the future. The only people whose life is not affected are those running the companies that you and I have no choice but to buy from - electricity, water, gas and telephone. The rest of us are struggling and by the looks of things will continue to struggle for some time.

The reason for mentioning all this gloom and doom is news from the trade of major changes concerning ST magazines. A couple of weeks ago it was announced that ST Format, ST Action and ST User were all going on 'firm sale', a move that is normally only made when the returns from the newsagents begin to get rather high. In other words, it would appear that the publishers concerned can no longer afford to pump out masses of copies of magazines that people are not buying. All this was accompanied by the usual bullish (or add a t for an anagram) talk of having established titles that no longer needed to be on sale or return, but the writing appears to be on the wall. A couple of weeks later Future Publishing announced that it was folding Public Domain, its 'hugely successful' magazine covering the ST PD scene among others and Europress announced that its public domain magazine would drop all coverage of the ST and Amiga and concentrate solely on the PC.

Reading behind the lines all this means that people are no longer buying even the cheapest software for their ST, and probably no longer buying STs. The huge shift towards the PC from all quarters makes sense when you consider that most PC users don't buy their machines, they just use the one at work, and many of them don't even buy the software - a few games can easily get lost on the company budget, especially when you are working for those companies that have us by the proverbials.

Hands up those small businesses who are basking in the sunshine of economic recovery. Better still drop me a line with your success stories and cheer us all up.

A BRIGHTER NOTE

On a much brighter note I must say a big thank you to everyone who has sent in contributions recently. We seem to have had a flood of good quality articles and programs in recent weeks which shows that the commitment and interest are still there. We still seem to be lacking good quality games suitable for typing in so if there are any of those nearing completion be sure to send them this way. Some of the articles and programs sent in are quite long so we will have to figure out the best way to present them, but better that problem than not having any at all to consider!

FROM OVERSEAS

We recently had two visitors, a couple of weeks apart, from opposite sides of the world bringing news of the Atari from their neck of the woods. Neil Patterson called in on a round the world trip from Australia where they experience much the same problems as we do with Atari and Ron Hoffman called in from Washington to bring news of the scene in the USA. Despite the dwindling support of what Ron and fellow US Atarians now call the 'Atari Classic' it seems that there is still good support among the user groups in the USA. Granted not what it used to be but the base is still there and it ain't going away just yet. It is most gratifying that these folks took time out on their vacations to look us up in what is hardly the most interesting or scenic part of the country. Nice to see you, fellas!

MOVING

We are moving offices shortly, probably around the beginning of September, but the majority of you will not notice any difference since we will be keeping the same P.O. Box and the same telephone numbers. The main reason for mentioning it is that over the coming months we will be even more inefficient than usual in answering letters and dealing with queries (can it get worse?) as we have a lot of work to do on the new offices to make them fit for habitation and, as many of you will know, moving takes one heck of a lot of time. Priority will be given to keeping the orders flowing and getting your mags out so you should not notice any difference in the service for orders but the 'non-essential' letters and queries may well have to be found a special resting place!

Les Ellingham

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Mailbag

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SOME UPDATES

I would like to comment on a couple of things in the last issue of New Atari User.

Ann O'Driscoll has an interesting tutorial about numeric functions but there is an error where it is claimed that 'a number to the power of -n is equivalent to the nth root (i.e. to the power of 1/n)'. In fact X^{-n} is the same as $1/X^n$. I don't agree totally with the example of probabilities. I know that simulating two dice to get a random number between 2 and 12 will make the extreme values less probable than the middle ones, but you could just as well use single random numbers if all you want to do is make a probability of 1/18 for something to happen. This could be done with IF INT (RND(0)*18)=0 THEN .... or IF RND(0)<1/18 THEN ...

Finally I was a bit confused by the solution to the Rainbow Room (WOBNIAR) in Guild of Thieves on the Tipster pages. I have also found the same route from the black square to the white square but I have had no success in following the same path back. Instead I have discovered that the correct route from the white square to the black one is NW, N, NW, E, SW, SW, NW, N. Then you will pass the same colours in exactly the same order whether you are going from the black room to the white or vice versa.

Roald Sund,
Norway

CONTROL KEYS

Thanks for such a great mag over the years. Would it be possible to print the control characters and their corresponding keypress combinations so that I can type in the programs that you publish? I would not normally ask for anything like this but this is my first attempt at typing in these programs in four years, due to my being an ST user in the intervening years and only just acquiring an 8-bit set up again.

Tim Melsom
London

Nice to have you back! We used to publish a table of all the keypress combinations on the same page as the TYPO III listing in each issue but dropped this when we had to reduce the number of pages. We have no plans to reintroduce this but there are still a number of back issues available with the TYPO listing and this table in. Why not order a back issue, asking us to ensure that it has TYPO in it?

CASSETTES

Are any of you old enough to remember the original Atari User? If so is there any chance of doing a cassette service like the old mag used to as well as the disk? Can the XL/XE do the same as the CBM 64 on tape with two or more games i.e. LOAD "Game Title", Found "Game Title" etc.? If not is there a routine that can be loaded in first to do it for you?

D. Copeland
Doncaster

... I have been wondering if you would be able to put a cassette with New Atari User just like the issue disks. I wouldn't mind paying a little extra so could you tell me if you have any such plans and how much it would cost.

John Ho,
London

If you remember the old Atari User you will also remember that they dropped both their issue cassette and then the disk after a short while. Producing a cassette each issue sounds like a good idea until you actually try to do it. Many programs work only on disk, there is no way to produce a menu, tapes are not reliable, disks can be copied quickly etc. etc. It is simply not cost effective to produce a cassette with each issue. On the occasions when we have done so with programs such as the excellent Brik-Bat and Day At The Races the response has not justified the cost of having the tapes commercially duplicated. As regards saving games on cassette with filenames, this is not possible with the standard Atari although we did publish a listing many, many years ago which could do this. Unfortunately that issue is now long out of print.

MACHINE CODE

I would like to learn how to program in machine code. Do you know of any books about this? Also do you require an Assembler? I would be very grateful if you could answer these questions for me. Your support for the Atari is brilliant, if it hadn't been for Page 6 I would probably have thrown my Atari in the bin. I now have a disk drive, a printer and other various peripherals.

M. Watson
Bridlington

All of the books on learning machine code on the Atari are now out of print but you might like to check out the new series starting this issue which, whilst not claiming to be the definitive guide to machine code programming, should get you started. You will need an Assembler and the only one currently available is the Atari Macro Assembler which you can get from the Page 6 Accessory Shop. You could also look out for Atari's Assembler/Editor cartridge secondhand. There have been other Assemblers but they are long gone. There are one or two in the public domain, although we wouldn't recommend them for beginners. You will need a copy of Mapping The Atari (absolutely essential), and other books to look out for include Atari Roots and Compute!'s Beginners Guide to Machine Language, both out of print. A notice in the Contact column asking for books on machine language would seem to be your best bet of finding what you need.

NO ZEP

I recently wrote to Zeppelin congratulating them for their Atari 8-bit games and asking about new releases. Unfortunately they informed me that if the market for the Atari 8-bit did not pick up then they would not be producing any more software for the Atari. They stated that the sales for the 8-bit are less than the actual cost of writing and producing a game. On this sad note I urge people to buy Zeppelin's existing games and to show support for any new releases.

Paul Harley,
High Wycombe

Sadly the 8-bit market will not pick up because Atari are no longer interested. They seem content to have the ST gaining only 6% of the market for software sales (down from around 25%) against Commodore's 22% with the Amiga. But of course Atari are now pushing the Lynx as their flagship with massive software sales of 2% against the Gameboy's 18% and Sega's 23%! One wonders whether Jack has more shares in the other companies than his own

MORE SUPPORT

Just a small note to confirm that we have a selected range of Atari 8-bit software in stock on disk, ROM and tape. We would be happy to see any 8-bit owners who can make it to this corner of the world.

Steve Wilds, MCE Computers, 13 Packers Row, Chesterfield, Derbyshire S40 1RB Tel. 0246 557008

CONTRIBUTIONS

FAME ...

thrills ...

and a few bob in your pocket!

Why not turn the love of your Atari into a few pounds to spend as you wish? Lots of people have done so by getting something published in NEW ATARI USER and they have also experienced the thrill of seeing their name in print. There really is something special about opening up a magazine and finding something that you have written all nicely laid out with your name at the top!

We pay for articles and programs on the following basis

£50 for the 'star' program listing each issue

£25 for all other listings published

£50 for the DISK BONUS program, if used on its own

£50 or more for multi-page articles

£25 for a single page article or review

plus other sundry payments for various items published

WHAT SHALL I WRITE ABOUT?

Programs for the XL/XE can be on almost anything, as a scan through past issues will reveal. We are short of good arcade games though and love stuff in machine code but Basic is fine if the game is good.

As for articles, the main aim is to write about something you really know about. Chances are that if you have discovered something that interests you enough to write about it, it will interest others as well.

All programs must be submitted on disk if possible. Cassettes will be accepted but we can't guarantee that they will load, so the risk is yours. Articles should be submitted as text files on disk wherever possible with printed copy if you have a printer.

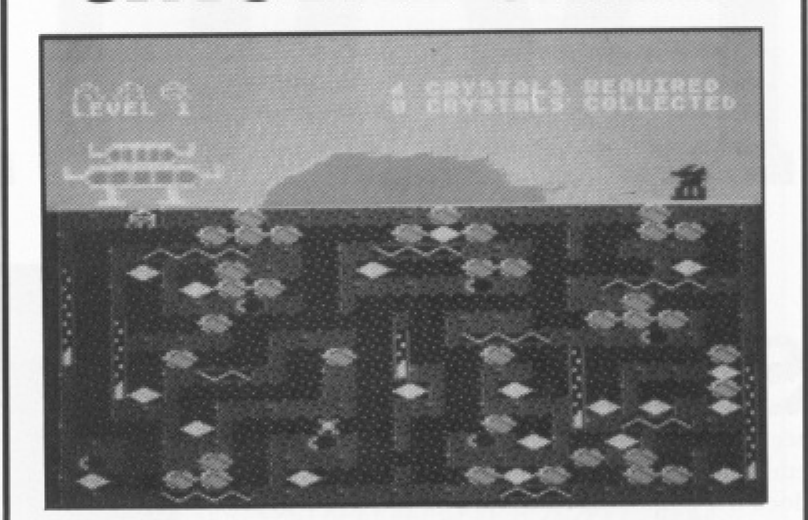
We are not really fussy about presentation, as long as the programs or articles are well written, but the easier you make it for us, the better chance that your work will be published. We work on close deadlines each issue and there is nothing worse that to select a really good looking program only to find that we can't figure out how to use it because the author didn't write up the instructions!

We can't guarantee that we will use every item submitted and we can't write back with reasons for not selecting certain articles or programs, but a lot do get published, as our regular contributors will know, so give it try.

Send YOUR contributions to
THE EDITOR, PAGE 6,
P.O. BOX 54, STAFFORD, ST16 1DR

DISK BONUS

CRYSTAL CRISIS



A machine code arcade game by Peter Foote

Crystal Crisis is a 100% machine code game based on the program of the same name by Phil Needham which appeared in Issue 33 of New Atari User. Graphics and sound have been modified and improved to give a fast paced action game with lots of on screen animation.

You control a robot with the task of collecting crystals buried underground to provide power for your stranded spaceship so that it may take off and leave the planet. The crystals have to be collected from a mine, used by the inhabitants of the planet, but it means blasting though rock strata, dodging falling rocks and avoiding the security robots. On the planet's surface your ship has been spotted and the natives are using a high powered laser to blast through the mountain behind which your ship is, for the time being, safe. You must collect as many crystals as necessary and get back inside the ship before the mountain, and your only means of escape, are destroyed.

PLUS

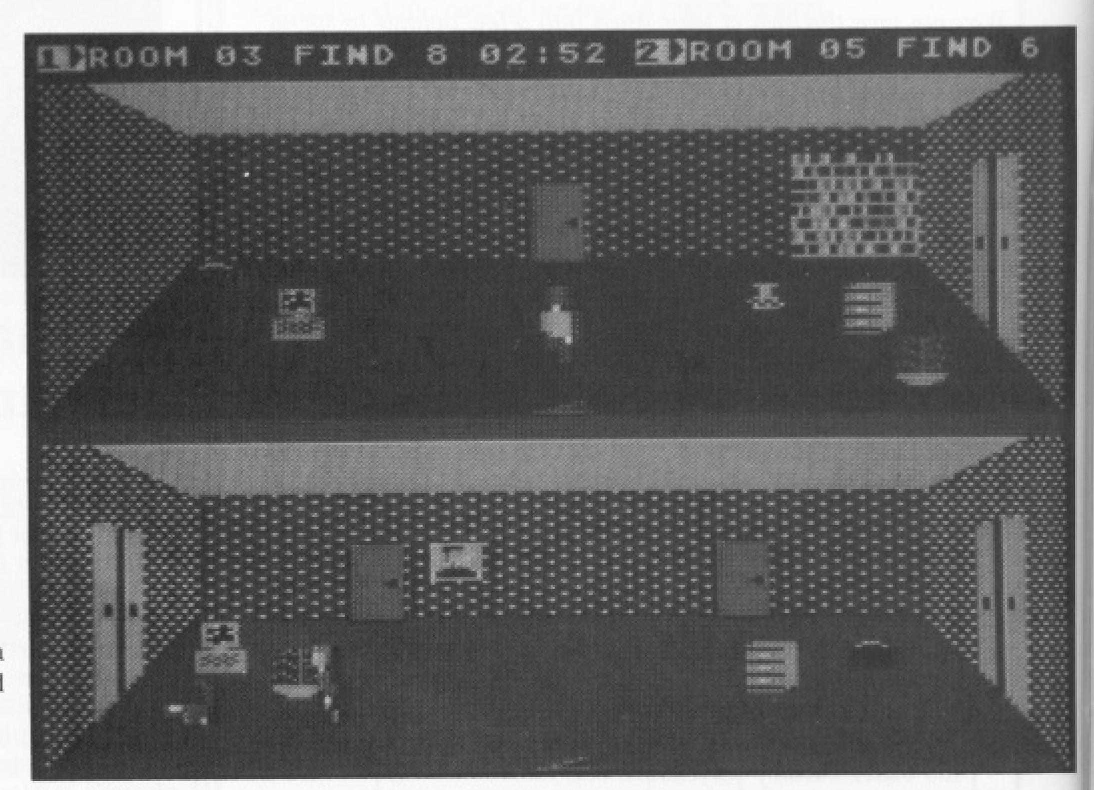
TICTAC

A playable demo version of KeSoft's new game reviewed in this issue

The object of the game is to simply line up three of the magic objects on each level but the task is not as easy as it might seem. In addition to working out just how to achieve your task you are up against a clock ticking away the seconds and a rather nasty ghost intent on stopping you in your tracks. This demo version has certain features disabled but is fully playable and demonstrates admirably the quality of KeSoft's game.

The NEW ATARI USER Issue 57 disk is sent automatically to Disk Subscribers with their magazine but is also available separately priced at £2.95. The disk contains all of the programs from this issue ready to run together with the bonuses mentioned above. To order a copy simply write to PAGE 6, P.O. Box 54, Stafford, ST16 1DR or telephone 0785 213928. Credit card orders are accepted.

DOUBLE AGENTS



So you think you are the slickest secret agent do you? Well, you've just been challenged! Your mission is to find 8 secrets and make your getaway from a foreign embassy before an equally determined opponent does the same in yours. All you need is a good karate kick, light fingers, a good memory and, most of all, double vision so that you can keep an eye on everything at once!

Each embassy comprises 21 rooms, 16 of which contain 1 secret. The 5 exceptions are those where you have the choice of 2 rooms to enter, in which case 1 will be empty. Secrets are hidden in identical positions in each embassy, but as a secret is found in one embassy it is no longer available in the opposing embassy. So, if you see your opponent find one in the room you are searching it is time to move on! If you enter a room where the secret has already been removed prior to you entering there will be a square printed next to the room number. You'd better move on again!

The action takes place on a split screen with player 1 in the top half and player 2 in the bottom half. Press the corresponding joystick trigger for a 1 or 2 player game. In a 1 player game the computer controls player 2.



SEARCHING FOR SECRETS

To search the rooms manoeuvre your figure over an object - "EXAMINING" will appear when you are in the correct position - and eventually "NOTHING HERE" or "SECRET FOUND" will display. Books and computers take some time to search while cupboards don't take as long. You will learn by experience which are the easiest objects to examine.

Safes and some doors are locked and you will need to crack the combination or blow the lock to continue. To crack the code, move the joystick until the desired figure appears then press the trigger to select. You will have to get all 3 digits correct to proceed. To blow the lock select "B" and press the trigger. Bear in mind though that you only have 3 bombs so use them wisely.

by

Bill Halsall

MOVING ON

Position your man over a door to move up to the next room. To move down from any room position your man over a 'door ajar' space at the foot of the screen and pull the joystick towards you.

In some rooms you will have to fight agents who try to stop you from searching the objects. Press the trigger to punch in the direction you are facing. To launch a flying kick move the joystick left or right and press the trigger simultaneously. To duck pull the joystick towards you and press the trigger. You cannot kill your adversaries but you may knock them down long enough to enable you to search the objects.

The buttons on the wall detonate stun grenades in each embassy which are equally effective on adversaries and yourself. Hope you press the correct one!

Your getaway car is waiting beyond the door in room 21 and you can escape once you have collected your 8 secrets. Press the appropriate joystick trigger to play again.

```
EX 1 REM ##############################
LT 2 REM #        DOUBLE AGENTS       #
GE 3 REM #             by             #
EZ 4 REM #        Bill  Halsall       #
HC 5 REM # -------------------------- #
LK 6 REM # NEW ATARI USER - AUG 1992  #
FD 7 REM ##############################
NN 8 REM
KW 10 REM ***       LISTING 1       ***
BC 12 REM
NA 14 REM  BOOT TAPE/OBJECT CODE FILE
           MAKER - BASED ON HEXSAVER
                 BY NICK HIGGS
BK 16 REM
PD 20 DIM LINE$(96),A$(8192):LINE=990:CNT
   =-48:TRAP 100:GOSUB 200
LM 30 A$(1)="0":A$(8192)="0":A$(2)=A$
RG 40 LINE=LINE+10:CNT=CNT+48:READ LINE$,
   CHKSUM:? "CHECKING LINE ";LINE
IH 50 CHK=USR(1536,ADR(LINE$),ADR(A$)+CNT
   )
QI 60 GOSUB 300:GOTO 40
VH 100 IF PEEK(195)<>6 THEN ? "ERROR ";PE
   EK(195);CHR$(253):END
AL 110 ? "WORKED OKAY":TRAP 100
RX 120 ? "(D)ISK OR (T)APE":GOSUB 180:IF
   K=68 THEN 140
AK 130 ? "READY CASSETTE AND PRESS RETURN
   ":OPEN #1,8,128,"C:":GOTO 160
KV 140 ? "READY DISK AND PRESS RETURN":GO
   SUB 180:IF K<>155 THEN 140
OF 150 OPEN #1,8,0,"D:DOUBLE.OBJ"
YH 160 ? #1;A$(1,6272):CLOSE #1:END
ZH 180 CLOSE #1:OPEN #1,4,0,"K:":GET #1,K
   :CLOSE #1:RETURN
MQ 200 FOR A=1536 TO 1658:READ D:POKE A,D
   :NEXT A:RETURN
IX 210 DATA 216,104,104,133,204,104,133,2
   03,104,133,206,104,133,205,169,0,141,1
   27,6,141
IZ 220 DATA 128,6,160,255,140,125,6,140,1
   26,6,173,126,6,201,47,208,11,173,127,6
QG 230 DATA 133,212,173,128,6,133,213,96,
   172,125,6,200,140,125,6,177,203,32,111
   ,6
IS 240 DATA 10,10,10,10,141,123,6,172,125
   ,6,200,140,125,6,177,203,32,111,6,24
ZH 250 DATA 109,123,6,172,126,6,200,140,1
   26,6,145,205,24,109,127,6,141,127,6,17
   3
MY 260 DATA 128,6,105,0,141,128,6,76,30,6
   ,96,201,58,144,4,56,233,55,96,56,233,4
   8,96
YL 300 DLNE=PEEK(184)*256+PEEK(183)
RV 310 IF LINE<>DLNE THEN ? "LINE ";STR$(
   LINE);" MISSING!":END
QZ 320 IF CHKSUM<>CHK THEN ? "ERROR IN DA
   TA AT LINE ";STR$(LINE):END
ZF 330 RETURN
YR 1000 DATA 0031FD1F2420A9008D2F02A93C8D
   02D3A9008DE702850EA9388DE802850FA92585
   0AA920850B18604C28204C7C3448A5,4232
KP 1010 DATA B98D0AD48D1AD0A93C8D09D4A900
   8D17D0A5B78D18D0A5C28D00D08D01D0A5C48D
   02D08D03D0A95A8D0002684048A5BA,5891
IS 1020 DATA 8D0AD48D1AD0A5B48D16D0A5B88D
   18D0AD0CD00D0DD0290CF00285BBAD0AD0F002
   85BFAD0BD0F00285CFA5C38D00D08D,6199
HW 1030 DATA 01D0A5C58D02D08D03D0A5C08D12
   D0A5C18D13D08D1ED0A9AB8D0002684048A900
   8D0AD48D1AD06840AD0CD00D0DD029,5569
EB 1040 DATA 0CF00285BCAD08D0F00285BDAD09
   D0F00285BE8D1ED0205C2C20FD36A92B8D0002
   A9208D01024C62E470C20049304400,4966
MA 1050 DATA 400404040404040404040404048470
   44004304040404040404040404048410 41E620
   000000000000000000CC003300CC0033,1516
BI 1060 DATA 00FFFFFFFFFFFFFFFFFFFFFFFFBEB
   FBFFFF1555AA555F55AA555555A5555555A555
   5F55AA555F55AA555555A5555555A4,7312
KT 1070 DATA 502AAAAAAAAAAEBBBBAAAAAAAAAA
   AABABAAEAAAAAAAAAAAAAAABABABAAAAAAAAAA8
   FFFAF9F5F5F5FDFDFFBF7F5F7F7FFF,8684
FE 1080 DATA 7FFAEAEAFFC0000C00AFABABFFC0
   000C00000C330030CC03000CF3C0CCF3C0FCC3
   30CC030055551505C0CCF3C0555554,5667
YV 1090 DATA 5015171A1B1E1A16155494A4B4A4
   A4D45401555144514455554055114511455555
   0F302AAAAAAAAAAAC030A8A8A8A8A8,4556
KL 1100 DATA A80000000000005540400000000000
   550000000000000004040405555D7777775D55
   55555D7777775D5550505050505050,2814
AD 1110 DATA 40CC0036565656565656CD55555555
   55555555656666666666565655556565656555 55
   5656161606060202555555555555555,3875
FI 1120 DATA 5556565656565656565655551515 05
   0501015C5555555555555555CC00939595959595
   5555595959595555595959999999995,4535
OZ 1130 DATA 9595949490908080000555454505 0
   40400095959595959595FF3F3F03CC003300
   FFFFFFFFFF3F3F03FFFFFFFFFFFFCF3,6684
TB 1140 DATA C0FFFCF3C0CC003300CC0033000C
   000300CC003000C0000000C000FCECECFC0000
   0F030303 0F3B2E0FF0C0C0C0F0B8EC,4906
VW 1150 DATA F00000000000000FFF00000000 0F
   F000FFC0000C00C0000C00939393FFC9C9C9FF
   707070FF262626FFDCDCDCFF797979,5220
EF 1160 DATA FF202020FF040404FFC000547474
   540000FFFFFFFFFFFFFFFFF00000000000000000
   0000000000000000030000000000F3FF0,3826
HE 1170 DATA C000000000FFFF0C0C0000000000
   C0F03C0000000000000000150000051F7EFE0200
   0F55FFAF6B5B98A0C055FFFF55FF00,3824
EY 1180 DATA 000C55EFFF5EFE02000F55FFAF6B
   5B98A0D554F0F050F00000000C0C0818183830
   10000000000606047C5C5C1E000000,3632
SY 1190 DATA 00000C0C083C3C1C000000000000
   0030303F70707800000000000606078FCB4B880
   000000000006060F0F0800000000000,2539
JH 1200 DATA 00000000000000000000007E1E1E00
   000000000000000001D1C07001C1C083E3E3E3C
   20000000001C1C083E3E3E1E020000,874
NE 1210 DATA 001C1C1C0800000000010102020 0E
   0E0E04000004002183464461C1C1C080000801E
   12362400007070700100000087050D0,1529
TR 1220 DATA 98E0E0E000000008B8486828 18E0
   E0E0000041FF627C000000000000000000060303
   03E1E102000000000000000000032320,3007
OP 1230 DATA F11C1C1C080000000003414101 01C
   1C1C080000000016140404A9008D2F02A9388D
   07D4A9E08DF402A200BD0E219D003C,2918
FF 1240 DATA BD0E229D003DBD0E239D003EE8D0
   EBA9038D1DD0A9218D6F02A9008D08D2A9038D
   0FD2A9E68D3002A9208D3102A208BD,5001
RA 1250 DATA C9249DC002CA10F7A92A8D2F02A0
   B6A220A907205CE4A9C08D0ED4607806C6E868
```

continued

TYPING IT IN

Cassette and disk users should type in Listing 1, SAVE or CSAVE a copy, then RUN the program. The program will check each line of data and inform you of any errors. Correct any errors and RUN the program again until all errors are eliminated. When this is done answer the cassette/disk questions accordingly to create a boot tape or binary disk file.

Cassette users should load the boot tape created by firstly removing all cartridges and then turning on the computer while holding down the START key (XL and XE owners should hold down OPTION as well). Press RETURN and the tape will load and run automatically.

Disk users should clear Listing 1 from memory after saving and running it as above by typing NEW and pressing RETURN. Next, type in Listing 2 and save it on the same disk as the binary file created by Listing 1. RUN the Listing 2 program with the disk in the drive and the game will load and run automatically.

DOUBLE AGENTS

```
   BC00B600A227A9009D0049CA10FA60,5536
GI 1260 DATA 20D224A21CBD0B259D0549CA10F7
   20582520D224A211BD28259D0B49CA10F72058
   25A21DBD3A259D0549CA10F760242F,4502
KA 1270 DATA 35222C25002127252E3433006279
   0022696C6C0028616C73616C6C666F72002E25
   370021342132290035332532226173,2784
RL 1280 DATA 6564006F6E00616E006964656100
   6279003A697368616E00216C69A9968D1C02AD
   1C02D0FB60A902A04A99004688D0FA,4556
EP 1290 DATA A901994C46C8C0D1D0F8A0089924
   46993B479963478810F4A004998D4799B54788
   10F78DDF478D00468D0146A92F8D02,5505
OY 1300 DATA 468D2C46A9308D03468D2D46A931
   8D24468D4A46A9328D25468D4B46A9348D1D47
   8D44478D6B478D92478DB9478DE047,4767
DC 1310 DATA A9338D3A478D63478D8C478DB547
   8DDE478D0748A21BA93A9D56469D7E469DA646
   9DCE469DF646CA10EE60203726BD30,5495
DZ 1320 DATA 49C914F0042903F006A0B3201926
   60A0AC201926A0BA20192660404384CBA000A9
   C091CBC8A98291CBA05091CBC891CB,5640
HJ 1330 DATA A02891CBA983C891CB60A6B0BD17
   2685CC60203726A97A85CBA200A000BD5E2691
   CBC8BD662691CB206E26E8E008D0EB,6224
ZO 1340 DATA 602825252A2525252D292E2E2B2E
   2E2C00A5CB18692885CB9002E6CC60203726A9
   9C85CBA200A000BD992691CBC8BDA1,4655
TZ 1350 DATA 2691CB206E26E8E008D0EB602026
   26222626240021252523252525272037 26A995
   85CBA004AD0AD2290318693B91CB88,4167
QW 1360 DATA 10F3206E26A5CBC935D0E8602037
   26A9A085CBACDA26A90C85B14CE0260FA5B191
   CB6020ED269818692 7A8E6B14CED26,5998
QE 1370 DATA 20DB26E6B1C84CDB26203726E6CC
   A91885CB6020F626AC0D27A90885B14CE02606
   20F626AC1B27A99085B14CE0260E20,5345
XG 1380 DATA F626AC2927A91485B14CE0261520
   F626AC3727A91885B14CED261F20F626AC5C27
   A91A85B120DB26C8E6B120ED26E6B1,5595
SD 1390 DATA AC5C27206E2620DB26C8E6B14CED
   2631203726A9A085CBA007A93591CBA00AA93F
   91CB6020F626AC7E27A90485B14CE0,5588
LH 1400 DATA 267120F626AC8C27A93685B14CED
   2654A214A9009DE84DA9019D4049CA10F3AAA9
   00AC0AD210059D404930039D4149E8,5152
QL 1410 DATA E8E8E8E015D0EBA00BA900993249
   8810FAA014B94049F013201229AAE8BD3249C9
   02F0F4FE32498A99404988 10E5A200,6003
MT 1420 DATA 8A9D004AE8D0FA205C28A200BD40
   49F005A8A90191CD205428E8E015D0EEA2A0AD
   0AD2A8A90199004ACAD0F4205C28A2,5983
WS 1430 DATA 00A003B1CDF00EAD0AD21005A90F
   4C2028A91791CD205428E8E015D0E6A200205C
   28A004B1CDF00ABD4C2891CDE88A29,5346
NR 1440 DATA 07AAC8C00BD0ED205428C9FCD0E4
   600647430E54159931A5CD18690C85CD60A94A
   85CEA90085CD60202829A6B0E001D0,5649
YK 1450 DATA 05206336A6B0BD30490A0A85B20A
   1865B285CDA94A85CEA000B1CDF003205D27A0
   01B1CDF003203F26A002B1CDF00320,5093
QZ 1460 DATA 7A26A003B1CDF0068DDA2620C926
   A004B1CDF0068D0D27200027A005B1CDF0068D
   1B27200E27A006B1CDF0068D292720,4807
FW 1470 DATA 1C27A007B1CDF0068D3727202A27
   A008B1CDF0068D5C27203827A009B1CDF0068D
   7E27207127A00AB1CDF0068D8C2720,4842
NI 1480 DATA 7F27A00BB1CDF00320A92620F825
   205629207A2960AD0AD2290F38E90590F660AD
   8402D0FBAD8402F0FB60A9338D0742,5291
ML 1490 DATA 8D0745A000A6B0D010B900469900
   40B90047990041C8D0F160B90046990043B900
   47990044C8D0F16020F626A9B885B1,5310
AT 1500 DATA BD3049F0172903C903F005A0DB4C
   ED26A0D320ED26C6B1A0E320ED2660A6B0BD30
   490A0A0A186914 95B9E001D004D6,5465
TF 1510 DATA B9D6B918694495B318695495B760
   A200BD76239D004BBDEE239D004CE8E078D0EF
   A200BD004B8D644920E029A5B29D80,5869
AW 1520 DATA 4BBD004C8D644920E029A5B29D80
   4CE8E080D0DFA9008DE14B8DE24B8DED4B8DEE
   4B60A90085B2A9018D6549A9808D66,6230
DH 1530 DATA 49AD64492D6549F008A5B2186D66
   4985B20E65494E6649D0E860A9018D1C02AD1C
   02D0FB60A000B9362A9970499 98749,5064
OS 1540 DATA C8C011D0F2A9928D8749A9088DC5
   498DC649AD372A8D88496091FF322F2F2D0010
   110026292E2400180020682AA010BD,4589
TI 1550 DATA 70499D0049E888D0F66000172068
   2AA00EA9009D0249E888D0F960A6B0BD572AAA
   60A6B0B5C638FD982A4A4AA8B99A2A,5877
DL 1560 DATA 85CBB9A52A187D172685CCB5C238
   E9304A4A8D5F49A8B1CB85B1600E4400285078
   A0C8F0184068900000000000000001,4657
JW 1570 DATA 010101A5B0AA2902D0E0206F2AA0
   00B9E02AC5B1F00BC8C00FD0F4A9009DC14960
   989DC149B9EF2A9D6C49A9008D9D2D,5848
JQ 1580 DATA 4C762D812A220C089014181A0436
   3C353FC0FF0C0C190514281E191E1428020202
   A6B0BD3049A8BD302BAAA9109D7749,3428
GA 1590 DATA 9D7849B9E84DF002A94C9D7949FE
   7849BD7849C91AD008A9109D7849FE77498810
   EB600017A6B0209C37BD3049A8A901,5674
BR 1600 DATA 99E84DBDC549F010DEC549BD302B
   A8B97F4938E901997F4960A6B0B5C2C960F017
   C998F010BD3049C914F01F18690229,6101
HC 1610 DATA 03C903D003FE3049FE3049209637
   20652820072C20FE2A20472A60BDC549D00FA9
   058D9D2DA90085CA20C2374C762DA9,4622
VR 1620 DATA 019D30494CD22B206F2ABD780229
   02D03698186950A8B1CBC9B8D02BB5C2C95CF0
   10C99CF00FBD304918690129 03C903,5178
JD 1630 DATA D003DE3049DE3049209637206528
   20072C20FE2A20472A60A6B0BD773085CC85CE
   BD032C85CB698085CDA900A03491CB,5205
TV 1640 DATA 91CD8810F9600E460E4620292CE6
   B0E6B020292CC6B0C6B0A6B0BD3049A8B9BC4D
   9DBA4D8D1ED0D00295C46020E52BA6,5999
TC 1650 DATA B0BD542C95C6BD582C95C2A9008D
   67498D60499D904D9DB04D9DB44D20A033A960
   8D68494CFA2F2A622A627C7CA4A4A5,5722
MW 1660 DATA CAF03DCEC749ADC749D035A9328D
   C749EE1549AD1549C91AD026A9108D1549EE14
   49AD1449C916D017A9108D1449EE12,5537
KY 1670 DATA 49AD1249C91AD008A9108D1249EE
   114960A005B9B12C9911498810F7A9328DC749
   85CA6010101A101000A200AD0AD229,4583
IL 1680 DATA 03A8B9CA2C9D004DE810F1600A11
   121314A2A9038D9D2D20762D20E82CA9009DC8
   499DCA49A9019DCC4960A6B0BD042D,4996
NO 1690 DATA 85CBA94985CCBD30490A0A85CDA9
   4D85CEA9FF9D6C49600B2220E82CBD7802C90F
   F01DFECA49BDCA49C906D005A9019D,5915
FA 1700 DATA CA49A8B9C92C85B1BDC849A8A5B1
   91CBBD8402D026BDC849A8B1CBC98AF01CC9A2
   F019D1CDD08BA9009DCA49FEC849BD,7395
EV 1710 DATA C849C903F011A8A98A91CB60BDE6
   4DF0FADEE64D20AE37A9009DCC49BDC149C904
   F0034C562B4C252E20592A20682A86,5774
ZL 1720 DATA B2AE9D2DBDEC2DA8BDF22D1865B2
   AAB99F2DCD9E2DF0089D0049C8E84C8C2D6000
   0E2538212D292E292E270E2E2F3428,4802
TS 1730 DATA 292E27002825322 50E3325233225
   3400262F352E24010E2C2F232B252401008A0A
   0A000E3029232B292E27002C2F232B,1678
YR 1740 DATA 0E2D293333292F2E00242F2E2501
   0E000A1725323F050403030403A6B0BD6C49F0
   0FDE6C49BD572AA8B90549C925D000,3287
QK 1750 DATA 60A9FF9D6C49BDC149F0E79D804D
   BD804DC904D0034CCF2CA9009DC149BD3049A8
   B94049DD804DD010A9009940 49A902,5955
GM 1760 DATA 8D9D2D20322B4C762DA6B0BD804D
   C90ED011A6B0BD30492903C903D0034CCF2C4C
   562BC90CD006207C2E4C472AC90DD0,4766
WP 1770 DATA 0620802E4C472AA9018D9D2D4C76
   2DA202D002A200BD824DD03420AE37AD0AD229
   1F7DBC2E9D834DA8BDBD2E997E3999,4876
AF 1780 DATA 7F39998139998239AD0AD2297E18
   69409D864D9D874DA9329D824D20D42E604F0F
   19F0AD844DF005A20220E22EAD824D,5156
UP 1790 DATA F005A20020E22EA003B9864D9904
   D088C0FFD0F560BD834D8D8A4DBD352F8D8B4D
   BD362F8D8C4DDE824DBD824DD00EE0,6085
ZV 1800 DATA 00F00620392F4C092F20442F60AC
```

```
   8B4DB98139998039C8CC8A4DD0F4AC8C4DB97F
   3999803988CC8A4DD0F4DE864DDE86,5817
SB 1810 DATA 4DFE874DFE874D6046780E40A042
   A90099803988D0FA60A044A900998039C8C07F
   D0F860A9008D6749A6B0BD904DD03E,6110
OM 1820 DATA BDCC49F0034C062DBD78022901D0
   0320B42FA6B0BD78022902D003209C2FA6B0BD
   78022904D00320CC2FA6B0BD780229,4687
KW 1830 DATA 08D00320E32FAD6749F00320B02A
   60A9608D68499DAC4DB5C6DD6F30F008186904
   95C620FA2F60A9E08D68499DAC4DB5,5662
VA 1840 DATA C6DD7330F00838E90495C620FA2F
   60A9808D68499DAC4DB5C2C938F00838E90495
   C220FA2F60A9008D68499DAC4DB5C2,6125
PS 1850 DATA C9C0F00818690495C220FA2F60AD
   6749D06F854DA6B0BD773085CC85CEB5C638E9
   0C85CB18698085CDA0009891CB91CD,6415
RX 1860 DATA C8C00CD0F7A5CB18690C85CB1869
   8085CDAD6849187D6049AAA000BD004B91CBBD
   004C91CDE8C8C00CD0F0A90091CB91,6270
KG 1870 DATA CDC8C018D0F7A6B0BD6049490C9D
   6049A9FF8D67499D6C49A5B02902D0034C472A
   60366E366E1E561E563A3A3B3BA6B0,5282
AM 1880 DATA BD904D1DCC49D034BD8402D02FBD
   78022902D0034C0A31BD78022904D0034CBA30
   BD78022908D0034CCF30BDAC4DC900,4672
TO 1890 DATA D0034CE430C980D0034CF73060A9
   0D9D944D20A837A9B08D6849D6C62046344C2A
   31A90D9D984D20A837A9308D6849D6,5357
CF 1900 DATA C62035344C2A31A9069DA04D20A8
   37A9188D68492032344C2A31A9069D9C4D20A8
   37A9988D68492043344C2A31BDAC4D,4353
EM 1910 DATA 100BA9D48D68499DA44D4C2231A9
   548D68499DA84DA9609DAC4D4C2A31A9019D90
   4DA9008D67499D60494CFA2FA6B0BD,5358
HQ 1920 DATA 904DF067BD944DF01EDE944DF012
   C90BF00420433460A9BC8D6849D6C64C2F31F6
   C6F6C64CF831BD984DF017DE984DF0,6548
SO 1930 DATA EFC90BF00420323460A93C8D6849
   D6C64C2F31BDA04DF015DEA04DF06EC905F001
   60A9248D68492032344C2F31BD9C4D,5346
HL 1940 DATA F015DE9C4DF054C905F00160A9A4
   8D68492043344C2F31BDA44D1DA84DF016A5B0
   2902F008BD8E4DD00B4CF831BD8402,5478
FN 1950 DATA F0034CF831BDB04DF00EDEB04DF0
   1CDDB53330162040346 0BDB44DF00DDEB44DF0
   09DDB5333003202F34 60B5C22903F0,5639
KQ 1960 DATA 0885B2B5C245B295C2B5C6090229
   FE95C6BDAC4D8D6849A90F9DB533A9009D904D
   4C2F31A6B0BDB84DF065BD904DD060,6211
ML 1970 DATA BDAE4D1DB24DD058AD0AD22903F0
   51A9008D6749B5C018690438F5C2B00620CC2F
   4C6032A6B0B5C218690438F5C0B003,5474
OB 1980 DATA 20E32FA6B0BD8E4DD012B5C638F5
   C4F00BB006209C2F4C793220B42FA6B0B5C4D5
   C6D031B5C038E910D5C2D0044CCF30,6347
QE 1990 DATA 60B5C038E904D5C2D0034CE430B5
   C018691 0D5C2D0034CBA30B5C0186904D5C2D0
   DE4CF730BD924D1D964DF0D3B5C418,6412
JK 2000 DATA 6902D5C6D0CAB5C018691 0F5C230
   C1C91810BD4C0A31A6B0B5BBF03DA90095BBBD
   B04D1DB44D1DB24D1DB64DD02BBDA2,6109
RM 2010 DATA 4D1D9E4D1D964D1D9A4DF01EBDA0
   4D1D9C4D1D944D1D984DF005AD0AD2100BBDA2
   4D1D9A4DF014D03860BDA04D1D984D,4984
QM 2020 DATA D06BBD9C4D1D944DD04D60B5C438
   F5C290E7207134A6B020A237BDB53318690A9D
   B04DA9488D68492043342 0A0334C2A,5448
YG 2030 DATA 31B5C238F5C490C1207134A6B020
   A237BDB53318690A9DB44DA9C88D6849203234
   20A0334C2A31B5C238F5C4909BE6B0,5828
WE 2040 DATA E6B020513420323 3C6B0C6B060B5
   C438F5C29085E6B0E6B020513420583 3C6B0C6
   B060A9009D944D9D984D9DA04D9D9C,6333
XC 2050 DATA 4D9DA44D9DA84D600F0F0F0FA200
   86B0A9038D253420DA33E6B0A90C8D253420DA
   33A90085BD85BE85BF85CF60A5BF2D,5301
PH 2060 DATA 2534F00B202634D00620683420 32
   33A5CF2D2534F00B202634D006206834205833
   E6B0A5BD2D2534F00B202634D00620,3962
FT 2070 DATA 683420323 3A5BE2D2534F00B2026
   34D00620683420583360 03A6B0BDB04D1DB44D
   602035342035 34A6B0B5C2C9C0F002,4615
JG 2080 DATA F6C26020463420463 4A6B0B5C2C9
   38F002D6C260A6B0AD0AD22907A8B960349DB5
   33600A141E28323C506EA9789DB533,5411
TI 2090 DATA 20713460A6B0A9009DCC499DC149
   60A90085CA20DB352066242063 2520A13520DD
   24207035209B29A9BC85B7A92485B9,5059
OH 2100 DATA A93885C0A90685C1205A3520A135
   20393520122A20472A209E2C20B72CA20086B0
   20652820072CE6B0A6B0E002D0F0A9,4663
ZG 2110 DATA 048D1C02A20086B020D332203A31
   207B3020A42B20512F20F82DE6B0A6B0ECDC4D
   D0E3E001D012203A3120C736203E36,4745
RK 2120 DATA 20FD3520F82D20D33220C02E20C0
   2E20C02E20C02EA20286B02021322 03A31E6B0
   A6B0E004D0F020B933AD1C02D0FBA5,5203
AR 2130 DATA CAF0034CCC342058254CA534A014
   A90099BC4D8810FAA00CAD0AD2291FAAFEBC4D
   8810F4A9038DE64D8DE74D60A200BD,5634
JZ 2140 DATA 8402F007E8E002D0F6F0F2E88EDC
   4D20D22460205825A221BD7F359D0349CA10F7
   6030726573730061707072 6F707269,5705
RY 2150 DATA 6174650074726967676572 00746F
   00737461727 4A900A8990042990045C8C007D0
   F585B08D904D8D914D8D924D8D934D,5248
XD 2160 DATA 8D30498D31498DCC498DCD498D84
   4D8D824D208D27206528E6B020652860A900A2
   B09500E8E0D0D0F985CBA8A23886CC,5957
VU 2170 DATA A08091CBC8D0FBE6CCA6CCE050D0
   F360A6B0BD904DD039AD0AD22903F032A9008D
   6749ADDE4D38E5C3F00BB00620CC2F,6848
MU 2180 DATA 4C233620E32FA6B0ADDF4D38E5C7
   F00B9006209C2F4C383620B42FA6B04C932F60
   A6B0B5C2CDDE4DD04DB5C6CDDF4DD0,6157
ZI 2190 DATA 46AD1D49C938F03FC92BD00AAD0A
   D2291FD0344C642DBDC549F02DBD3049A8B940
   49F024C90BF020AD0AD2290F38E903,5358
OV 2200 DATA 90F6CDDD4DF0F18DDD4DA8B9A736
   8DDE4DB9B7368DDF4D60AD0AD22903F0F91869
   0CCDDD4DF0F14C8436404868389CAC,6723
MJ 2210 DATA C0848C6C4CB45460987C6A62625E
   66665E625656566E66565656A6B0BD904DD02E
   A5C9186902C5C7D025ADB34D0DB74D,5650
GD 2220 DATA D01DA5C338E5C5900BAD0AD21003
   4CBA304CF730AD0AD210034CE4304CCF3060AD
   E04DF015CEE04DADE04D4A4AAABDB4,5921
SD 2230 DATA 378D00D2BDBF378D01D2ADE14DF0
   14CEE14DADE14D4AAABDB7378D02D2BDBB378D
   03D2ADE24DF011A9148D04D2CEE24D,6506
QW 2240 DATA ADE24D1869608D05D2ADE34DF015
   A9018D06D2A9088D07D2CEE34DADE34DD0038D
   07D2ADE44DF00FA91F8D00D2CEE44D,6208
IC 2250 DATA ADE44D4A8D01D2ADE54DF01CCEE5
   4DADE54D4A4A1869208D01D28D03D20A0A8D00
   D21869018D02D260A90C8DE04D60A9,5495
BB 2260 DATA 088DE14D60A90F8DE24D60A9088D
   E34D60A91E8DE44D60001F08003C1E2D00A8A8
   A8002848A900A899004EC8D0FAA922,4949
RV 2270 DATA 8D01D2A9C88D00D2B9663899B24E
   B96C3899DA4EC8C006D0EFA6B0BD172685CCA9
   0495B9A0009895C484CBB9004E91CB,6506
HJ 2280 DATA 20072AC8C0F0D0F384CBA000A9C0
   91CB20072AC8D0F6E6CCA9C091CB20072AC8C0
   18D0F4A90095C2A93C8DE54DE001F0,6848
TD 2290 DATA 1CA21EA000B9A14099A040B9C940
   99C840C8C01ED0EF20072ACAD0E760A21EA000
   B9A14399A043B9C94399C843C8C01E,6161
VK 2300 DATA D0EF20072ACAD0E7604142434445
   464748494A4B4C000000000000000000000000
   000000000000000000000000000000,2111
```

```
GK 10 REM LOAD AND RUN ROUTINE
          FOR DOUBLE AGENTS
XG 20 OPEN #1,4,0,"D:DOUBLE.OBJ"
AN 30 POKE 850,7:POKE 852,253:POKE 853,31
   :POKE 856,255:POKE 857,255
SN 40 X=USR(ADR("hhh[illegible]LV[illegible]"),16)
GT 50 CLOSE #1:X=USR(8229)
```

THE CHEAPEST (and best?) WORD PROCESSOR

Looking for quality word processing? Something to safeguard your valuable data? Or maybe you must want to unwind with a decent crossword puzzle or two? Look no further than Edmund Blake's column...

There are probably more computers processing more words than any other application in the known Universe, and the computer as a writing tool is, it's safe to say, silicon's most popular application. The Atari Classics are no exception of course. There have been any number of excellent word processors available almost since the machine's launch, the best known being good old AtariWriter, and the somewhat impossible-to-find Paperclip.

Both programs are excellent but required almost £40 (for the former) and months of diligent searching (for the latter) to get them to the safety of your disk drive. For those without the cash or necessary powers of detection, there was always SpeedScript from Compute! Publications, but a week of solid typing to enter the listing was not everyone's cup of tea.

Well, now there's no need to break the bank or your back in fruitless searching. Textpro is a public domain word processor positively brimming over with features - the kind of features you'd have paid a premium for just a few short years ago.

First thing you'll notice about Textpro is its deliciously clean and clear screen. Whereas other commercial offerings clutter up their editing screens with a lot of extra information which isn't really necessary, Textpro's is headed by a simple status and prompt bar, and that's it! Every other available line is given over to your typing. There's no need to scroll to and fro dementedly through your text when reviewing it because Textpro crams as much as possible on to each page.

Second thing you'll notice about Textpro is that by brushing a finger tip over the Help console key, the program's comprehensive on-line files, fronted by a simple to use menu appear instantly, ready to get you out of trouble.

Each help subject is listed on the Help menu and can be selected by pressing the associated Option and numeric key displayed alongside it. With Textpro, you'll never find yourself stuck halfway through a long letter or what have you, unable to proceed because you've forgotten some command or other and terrified of losing all the text you've typed so far.

6502 throughout, the program is as fast as anything else you've seen, and performs almost all its many functions in the blink of an eye. It never drops a character while you're typing either, and that's important for the 'hunt and peck' typists among you who find it difficult to look at the screen and the keyboard at the same time.

```
Save File>D:REVIEW.TXT
As you can see, the Textpro main screen
is almost completely given over to your
text. There's none of the screen
clutter associated with some other word
processors.

The program prompts for any information
it requires in the status bar at the
top of the screen...
```

"The program gives over almost all of its editing window to your text. Tab combs and the like have been kept well away..."

Main features include super-fast search and replace, comprehensive block manipulation including a semi-permanent paste buffer from which you can retrieve previously cut text or make multiple pastes, excellent control over text formatting on everything from character to paragraph to entire document level, excellent printer support, DOS operations from within the editor and footers (via a pre-defined macro).

Specialist features include an all-important word count, macros to automate several otherwise separate keyboard commands, printer definition and set up from the keyboard, screen and text colour and intensity customising, built-in communications capabilities and full support for SpartaDOS. In addition, any program customising you've done can be saved as a parameter file and loaded automatically when you boot the program - you can set the program up to the exact way you want it.

It would be very easy to give over an entire issue's column to

reviewing Textpro and there would still be features left unreviewed, so suffice it to say that you'll never spend a better £2.50 on serious software.

Not to be missed.

BETTER SAFE THAN...

Copymate is a floppy disk sector copier designed to speed up the unloved process of data back up, program and file copying.

As any disk user will tell you, the humble floppy is not exactly secure from mishaps. Those who upgraded from unreliable cassette to super-reliable disk-based systems soon realised that their new storage medium had problems all its own - disks can and do lose data, become corrupt, get accidentally overwritten, soaked in spilled coffee or just plain disappear (especially with an errant five-year-old around...). What's needed is a regular session of backing-up.

Trouble is - and you'll know if you've done it - backing up floppy disks is just so boring. It's bad enough with two drives but if you limited to one, then the constant swapping of source and destination disks is a real pain - enough to put you off performing a back-up altogether. And there lies the route to data disintegration.

Boot Copymate however, and at least some of your problems are over. The program is operated from a menu front end enabling you to select source and destination drives, get a directory listing of a disk in any attached floppy drive, and select from a number of unusual features.

The program can format destination floppies as it copies, and you can switch write verify off to speed the process even further. In addition, Copymate supports Ultraspeed sector skewing for the ultimate and fast access.

But its while carrying out its intended purpose that you begin to see just how good the program is. On a 130XE, Copymate makes a perfect copy of any disk in just one pass. No big deal, right? But 800XL/65XE owners previously tied to what seemed like dozens of disk swaps to transfer just over 100K of data, can now do the job in just two passes. Not only that, but once the source floppy has been read, you can make as many copies as you like from the now RAM-based data.

'Course, Copymate won't work with copy-protected programs - the Classic's lack of drive routines (they're in the firmware inside the drive itself) makes sure of that, but you can, at least, make swift and sure back-ups of word processed and database files, artwork collections and so on without the tedium of old.

Unexciting perhaps, but it's software such as Copymate which makes computing so much more fun, because you don't have to worry about the dull stuff.

X-WORD

If you're the kind of guy who likes to spread the Times out on your patent-leather briefcase on the 8.47 to Victoria, and impress fellow commuters with your dazzling skills at the crossword, then X-Word is just for you. The program does nothing more than provide an on-screen representation of a standard crossword puzzle grid (15 by 15 squares), and over 26 puzzle versions with which to fill it.

X-Word is shipped as a standard binary load file. That is, you boot the program from DOS using the L Binary Load option. You're prompted for a puzzle to solve (in the range A to Z), the screen clears, and a crossword grid is drawn on screen with a text window beneath it. The text window is used to display clues and the other prompts which make up the program.

Immediately after booting, the program prompts you for the answer to first clue. Each time it poses a question, the location for the answer is displayed in the crossword grid as a series of black squares. If you know the answer, simply type it in! The program automatically inserts it in the correct place, then pushes on to the next clue.

Stuck? It's not hard to see why! Some of the puzzles really are quite difficult and require the efforts of seasoned puzzle solvers in order to beat them. Fortunately, for those more at home with the Sun's 'coffee-time' or similar, there's a help feature and a cheat option.

While not exactly giving away the answers, Help does at least, provide you with a list of function keys accessed by holding the Control and one other key, from which you can choose a suitable cheat mode.

And the latter? Well, you can elect to see the first letter of the answer, the whole answer, even the solution to the entire crossword!

You can also have the program show you any errors in the crossword, back up step by step if you think you know where you've made a mistake, and switch between across and down clues.

All in all, a cracking program, and one which will keep enthusiasts amused for days. It's fast, not too easy and is accompanied by a large range of interesting clues. These take the form of American-style word/synonym rather than the more fiendish cryptic so beloved of dedicated UK puzzlers, but X-Word is still a fun way to hone your skills

AND FINALLY...

Why not write to me and tell me what area of computing you're interested in and what you'd like to read about. Feedback is a great help, because it enables me to determine just what ought to be featured in the column ... and what should be left alone! Write, care of your favourite magazine, OK?

HOW TO GET THEM!

All of the programs featured in the column are available from the Page 6 8-bit PD library. Each has a unique reference code as a well as a distinct name, but it's the reference code you should use when ordering or making enquiries. Contact Page 6 if you don't have a copy of the PD catalogue or Accessory Shop leaflets, or to check system requirements for the programs. The disks referred to in this column are:

DS#8 - TEXTPRO
Disk #76 - COPYMATE 4.3
Disk #101 - X-WORD

Prices are £2.50 per disk. Order from Page 6, PO Box 54, Stafford ST16 1DR. Telephone 0785 213928. FAX 0785 54355 (Credit card orders accepted)

FIRST STEPS IN ASSEMBLY Part 1

Daniel Lea starts a short series to show that machine code programming is not as hard as you might think

If you are a programmer then programming in Atari Basic is okay for a while but soon, especially if you are a games programmer, you long for more power and speed which not provided by the slow Atari Basic. Also many of the more advanced features of the Atari 8-bit are not accessible in Basic (e.g. Vertical Blank Interrupts, Display List Interrupts, hardware scrolling, Player Missile Graphics ... (and so the list goes on). The thing to do is program in machine code, but of course it isn't that simple.

Machine code is the lowest level of programming. This means that it is orientated entirely towards the machine and its microprocessor (hence its great speed). BASIC on the other hand is an example of a high level language, easy to understand and learn (and debug!), but it needs to be interpreted, changed into machine code line by line when executed, hence it is much slower. Of course there is middle ground here in the form of other languages and of course BASIC programs may be compiled into machine code, however they are often still much slower than pure machine language and the problem of little access to advanced features isn't solved.

You will be surprised to hear (or perhaps not!) that you don't need any extra software to program in MACHINE code. "Hang on there a minute matey", you're thinking, "but I've been told you need an assembler to program in machine code" - Rubbish! A major misunderstanding is the difference between ASSEMBLER and MACHINE CODE - there is a difference you know (witness the fact that they are different words!).

As I said before machine code is the language of the microprocessor, it consists of binary code (i.e. a series of ones and zeroes), not particularly understandable - to the ordinary mortal anyway! Assembly language, on the other hand, is the means for ordinary humans to program machine code without the headaches, well some of them anyway!! It consists of three letter mnemonics standing for individual machine code instructions. Each 6502 (that's the microprocessor living inside your trusty 8-bit, in case you didn't know) instruction has a mnemonic standing for it - e.g. LDA stands for LoaD Accumulator. You do, in contrast to pure machine code, need special software to program in Assembler, for example the Assembler Editor cartridge is a inexpensive, reliable, but slow piece of software which I use myself.

The 6502 processor is an 8-bit microprocessor meaning it can handle eight bits at a time or a single byte. So it can handle a value from 0 to 255 (or $0 to $FF - see note on hexadecimal). The 6502 processor has a 16 bit address bus - this means it can handle two byte memory addresses. That is an address value from 0 to 65535 ($0 to $FFFF) or 64 Kilobytes. hence 64K is the maximum amount of RAM (Random Access Memory) accessible AT ONE TIME (bank switching can give more RAM in a 130XE, however it cannot be all used at once).

THE REGISTERS

The processor has six registers (i.e. boxes to put numbers it wants to play with):

The accumulator (symbol A) - is the main general purpose register in the 6502
Two index registers (symbols X and Y) - are other general purpose registers
(A,X and Y all 8-bit registers i.e. can handle values from 0-255)
The program counter - so the 6502 knows where it is in a machine code program (a 16 bit register)
The stack pointer - I'll talk about that in later article
The processor status register - this register is very important as you'll discover in later articles

If you've read and understood everything so far then you are probably ready to be introduced to your first assembly language instructions.

LDA and STA

LDA - *Load Accumulator* - Puts a specified figure into the accumulator. There are two basic forms with this instruction:

The first is known as *Immediate Addressing* which is where the figure after the LDA, indicated by # (hash), is put into the accumulator. The figure used must be in the range 0 to 255 ($00-$FF).

format: LDA #number

A dollar sign ($) indicates a hexadecimal number, no other prefix indicates a decimal number.

Examples : LDA #255
LDA #$FF
... load the figure of 255 into the accumulator.

The second form is known as *Direct Addressing* where the number after the LDA indicates an address from where the number to store in the accumulator is retrieved.

Examples: LDA 1536
LDA $0600
... if the address 1536 ($0600) has 21 stored in it that figure will be loaded into the accumulator.

STA - *STore Accumulator* - Stores the figure in the accumulator at a specified location.

Examples: STA 710
STA $02C6

With this basic knowledge we can now create the equivalent of the BASIC, "POKE 710,0" (or indeed "SETCOLOR 2,0,0") as follows

```
LDA #0
STA 710
```

To use this little program on the Assembler Editor cartridge type the following in EDIT mode.

```
10  *=$0600
20  LDA #0
30  STA 710
40  BRK
```

Notice the two spaces before each instruction.

Type LIST to see the program has gone in okay. Now type ASM - the program is now assembling into machine code in memory, there should(!) be no errors detected. Now type BUG. You are now in Debug (yuk! dirty word ...) mode. G600 starts the program (600 is the start address in hexadecimal). The program will run. You will see the screen turn black because the background colour has been set to 0. We're well on the way now!!

HOW IT WORKS

I'll just explain lines 10 and 40.
Line 10 is the start address of the program, all programs must have a start address otherwise an error will result because the assembler won't know where to put the code. $0600 (1536) or page 6 (not a coincidence that .. it a highly useful area of RAM, and a great mag as well!!). Where was I .. ah yes, page 6 is a safe place to put small fragments of code (you'll find the subject of where to put machine code programs in memory quite well discussed in the Assembler Editor manual).

HEXADECIMAL

Hexadecimal is a number system used quite commonly in computing in general and especially in assembler. It works on a base 16 principle unlike decimal which is base 10. The reason it is popular is that it fits in well with binary, in that a hexadecimal digit represents four binary digits. It uses letters to represent the extra six digits it has.

Decimal	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
	=	=	=	=	=	=	=	=	=	=	=	=	=	=	=	=
Hex	0	1	2	3	4	5	6	7	8	9	A	B	C	E	D	F

To convert decimal to Hexadecimal (or vice versa) the easiest option is a scientific calculator with these functions available. Other options are programs which other people have written to convert numbers, these however aren't quite as versatile as the calculator. The last option is to use maths or tables - A table of ASCII character codes usually will have decimal and hexadecimal values from 0 to 255 (or $0 to $FF!)

Line 40 BRK. BRK is another assembly language instruction meaning BReaK it simply interrupts the Debugger, as would the actual break key, and stops the program.

BE AMAZED!

I'll leave these commands with a little program which will amaze you as to what can be done with LDA and STA (and JMP - an explanation follows but you'll probably guess what it does anyway!). Type in the following listing exactly as shown, or it may not work.

```
10  *=$0600
20 S LDA 54283
30  STA 54282
40  STA 53272
50  JMP S
```

A NEW INSTRUCTION

That simple program is pretty amazing isn't it? Bet you thought that such effects were really difficult to code, now you are beginning to see that machine code programming is not so bad after all!
Let's explain that **JMP** command . As you have probably guessed JMP stands for JuMP. It is, as you will have already figured out, the equivalent of the BASIC GOTO statement i.e. it simply jumps to another program line. It can be in either of the following forms:

JMP $5000
or
JMP S (where S is a label)

The only difference is that S represents a label in the program whereas the previous example uses a pure hexadecimal address. A label can be any number of alphanumeric characters beginning with a letter e.g. HELLO, LOOP2, NUMBER2, ANTIDISESTABLISHMENTARIANISM (silly one that, but labels can be any length), X4A2 .... (I could go on forever ... but what is the point of an article full of labels!!)

Anyway back to the point .. to put labels in your program you simply precede the instruction with a label, leave a single space (more if you wish) and then have the instruction, as below.

LABEL [1 or more spaces] INSTRUCTION

To type in assembly language programs you must remember this also ... *(read this it is important).* With a normal instruction (i.e. one not preceded by a label) you MUST leave 2 or more spaces, otherwise the assembler will think your instruction is a label and probably produce an error (your program won't work anyway). With labels you MUST leave only a single space otherwise the assembler will think your label is an instruction and since there is no such instruction as LAB3X1A (or whatever) an error will be produced. Got all that? ... Good! So the general formats are:

1. Line number [1 space only] LABEL [1+ spaces] INSTRUCTION
2. Line number [2+ spaces] INSTRUCTION

So if we refer to the earlier program you can see that JMP S loops the program back to the place where the label S is (by the way, using a non-existent label will cause an error too), so a continuous loop is formed. Not all that complicated after all is it?

MAKING USE OF LABELS

You can also use labels with the LDA and STA instructions, and many others you are yet to be introduced to. To make this fact useful you either define the labels at the beginning of your source code or you use the **.BYTE** or **.WORD** assembler directives (these are explained in the Assembler Editor manual). We can use the ability to define labels (e.g. 10 [1 space] LABEL= [number]) to make our program look a bit better. It's good practice to use labels.

```
10 COLPF2=53272
20 WSYNC=54282
30 VCOUNT=54283
40  *=$0600
50 START LDA VCOUNT
60  STA WSYNC
70  STA COLPF2
80  JMP START
```

That makes it a lot more readable doesn't it. Well perhaps not ... what are COLPF2, WSYNC, and VCOUNT? Well a copy of Mapping the Atari by Compute! is the solution my friend! Just for you though I'll give you short (very short) explanations.

COLPF2 = Hardware register whose shadow is COLOR2. This controls the colour of the normally blue part of the screen.
WSYNC = STOring the Accumulator here causes the processor to halt until the electron beam in the TV screen has reached the end of the line.
VCOUNT = A store of how many lines down the screen the electron beam is.

Using these locations you can achieve the amazing effect seen here (perhaps I'll expand the program a little further later on, there are other possible improvements).

INDEX REGISTERS

The 6502 has, as well as the accumulator, two more registers. These are X and Y and they work in the same way as the Accumulator but have other uses too. You can load and store them like the accumulator, so we have four new instructions.

LDX - LoaD X
LDY - LoaD Y
STX - STore X
STY - STore Y

You can also copy the values between the registers using the Transfer instructions.

TAX - Transfer Accumulator to X
TAY - Transfer Accumulator to Y
TXA - Transfer X to Accumulator
TYA - Transfer Y to Accumulator

What the transfer instruction actually does is to copy the first thing into the second thing:
So if X=10 and A=4 then TXA will make A=10 but X will remain as 10.

TRANSFER BETWEEN X and Y

You can also transfer Y to X or X to Y, but there are no specific instructions to do this. You need to use a pair of instructions to transfer X to Y:

```
TXA ;Transfer X to A
TAY ;Transfer A to Y
```

... to transfer Y to X:

```
TYA ;Transfer Y to A
TAX ;Transfer A to X
```

ADDRESSING MODES

So far we have met two of the addressing modes:

1. Immediate addressing *e.g.* LDA #$FF
2. Direct (or Absolute) addressing *e.g.* STA $D201

but there are several others ...

Zero page direct addressing

The same as normal direct addressing except that this is only used on page zero i.e. locations 0 to 255 ($00 to $FF)

e.g. LDA $FF

Indexed addressing modes

Now we come onto the indexed addressing modes, this is where the X and Y index registers come in really handy:
The first two are Indexed direct addressing and zero page Indexed direct addressing. They are exactly the same except that zero page indexed direct uses only the zero page.

The format is
[OPERATION] [ADDRESS],(comma)[X or Y index]
e.g. LDA 708,X

If X=2 in the above example then the contents of 710 are loaded into the accumulator i.e. 708+X, X=2, so 708+2 which

equals 710 (no problem!)

Note that these indexed addressing modes also work with LDX and LDY however you cannot use X with LDX or Y with LDY.

Indirect addressing

Format:

JMP ([address])

e.g. JMP (1536)

This addressing mode only works with JMP. What happens is that the program jumps to an address STORED at 1536 and 1537, it must be two bytes because an address consists of two bytes.

STORING TWO BYTE ADDRESSES

To be able to use this addressing mode you need to know a little about how two byte addresses are stored in memory. If we take the address $1C0A (It's easier to understand in hexadecimal!) ...

The first memory location contains the LOW BYTE - $0A
The second memory location contains the HIGH BYTE - $1C

You can see that the numbers are stored the opposite way round to that which you would expect.

MORE ZERO PAGE ADDRESSING

The next two addressing modes *ONLY* work with zero page addresses ($00-$FF, you remember!) These addressing modes are extremely useful, but there is a definite shortage of zero page locations which can be used, especially with BASIC and Assembler. Your best bet is to stick with addresses 203-207 ($CB-$CF). 208-209 ($D0-$D1) are unused by BASIC although they may not agree with the Assembler debugger.

Pre-indexed indirect addressing

Similar to indirect addressing except an index is used and can be used with other commands besides JMP. Note only the X index is used.

Format:

[OPERATION] ([zero page address],X)

e.g. LDA ($06,X)

LoaD Accumulator at address stored low byte at $06+X and high byte at $07+X. Note there is a wrap around if the address+X is greater than $FF.

Post-indexed indirect addressing

This mode always uses Y as the index.

Format:

[OPERATION] ([Zero page address]),Y

e.g. STA ($0A),Y

STore Accumulator at an address stored low byte at $0A high byte at $0B, and then add Y onto the address (there you see the subtle difference between post and pre-indexed indirect addressing).

There is one more addressing mode to introduce but since we haven't met the commands it is used with there's no point telling you about it ... yet!

BINARY

Whilst on the subject of number bases it is as good a time as any to discuss the all important binary number system, the basis of the digital computer. It is represented by ones and zeros, or inside the computer this can be an electronic switch on or off. A Binary digIT or BIT is a single 1 or 0 or a single switch. A series of eight bits is a BYTE which can represent a decimal number from 0 to 255 as follows:

bit number:	7	6	5	4	3	2	1	0
decimal number:	128	64	32	16	8	4	2	1

Example

00011010 is the same as
128*0 + 64*0 + 32*0 + 16*1 + 8*1 + 4*0 + 2*1 + 1*0
which equals 26

Bit 7 is called the MSB or Most Significant Bit and bit 0 is the LSB or Least Significant Bit for obvious reasons. A byte can be divided into two halves, known as NIBBLEs. I can't think why they are called nibbles, I suppose it must be a kind of high tech joke (geddit.. byte, nibble!) Each nibble consists of four bits therefore allowing numbers from 0 to 15 to be represented or the full range of a single hexadecimal digit $0 to $F (see table below)

Range for a nibble

Binary	Hexadecimal	Decimal
0000	0	0
0001	1	1
0010	2	2
0011	3	3
0100	4	4
0101	5	5
0110	6	6
0111	7	7
1000	8	8
1001	9	9
1010	A	10
1011	B	11
1100	C	12
1101	D	13
1110	E	14
1111	F	15

TWO NEW INSTRUCTIONS

To conclude this first part of the series I will introduce two more instructions, JSR and RTS.

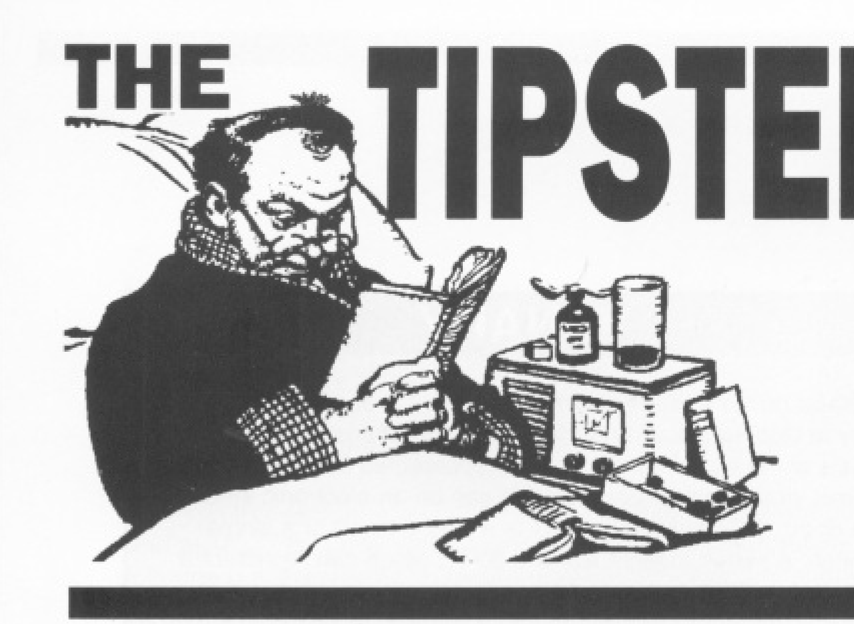
JSR - *Jump to SubRoutine* - equivalent to the BASIC GOSUB only used in direct addressing.

e.g. JSR 55396
or JSR SUBROUTINE

RTS - *ReTurn from Subroutine* - no address required with this command. Like the basic return statement.

Well I hope you took that all in ... Next issue I'll have some more programs to type in, so Assemblers at the ready! Bye!!!

THE TIPSTER



ADVENTURE SPECIAL

As promised last issue there will be the map of Montezumas Revenge this time, they were left out last issue because of a teensy weensy communication problem between the Ed and I (he couldn't read my scrawl!) so hopefully they will be presented in all their incredible glory. (Hopefully!).

Me and my big mouth! I ask for help and solutions for Level 9 adventures and get buried upto my eyeballs in help sheets and solutions. More on these at the end (remember to read the bit in between!).

Also this issue we have received the solution to Scapegoat, Ingrid's Back (and her front!), Starcross hints to get you started as asked for in the last issue, a massive almanac on the ins and out for Hardball and the gaff is blown on Infiltrator. There is also the map of Mission Shark for all of you out there that are lost and befuddled. But will we get it all in? I doubt it, so if before you get all excited over a game you have been trying to win for the past five years, you had better whip through the next few pages to see if it is all there! If it ain't you can be pretty sure that it will be in the next issue.

KICK OFF

Burying them in the back of the net is now as easy for you as it is for Gary Lineker thanks to John Dady of Hornchurch who has sent me a plethora of information for Kick Off.

He finds that the best way of attacking the goal is by dribbling the ball down the side of the pitch. If one of the opposition come to tackle you kick the ball further up the side and another player will receive it. Dribble further along the side. When you become parallel with the penalty area two opposition players will come out to meet you. You can dodge these by dribbling outwards towards the edge and back in again. When you come into the area. Now you have a very close range shot with only the goalie to beat.

When you are in the league competition the best teams to be are either Germany or Brazil as they have got the best players.

FREE CASSETTES!

If your hint, tip or map is used by The Tipster you can claim a FREE CASSETTE (from those currently available from The Accessory Shop) but you won't get one if you don't send something to The Tipster - get tipping now!

HOW TO CLAIM

If you see your name in this column just drop us a line and say 'My name is ..... and I claim my free Tipster cassette' and simply tell us which cassette you would like (give an alternative just in case). We will whip it off to you poste haste (or straight away). If you prefer you can always give us a ring instead on the usual number



NOW LOOK HERE

SCAPEGOAT

From Geoffrey Tanton of Belvedere comes a solution to Scapegoat, by Level 9. If any one knows what the last piece of evidence is then please send me the info as soon as possible. As usual it's all writ backwards.

Part 1.

N, TEG NWODELTSIHT, S, W, TEG KOOBHCTAM, E, TEG ELBBEP, OG OT GIWT, TIAW ROF ROSIVREPUS, TIAW, TEG DRAC, TEG GIWT, TEG DRAC, OG OT NRU, HSUP NRU, (TIAW LITNU TI SI THGIN NEHT WOLLOF EOJ DNUORA EHT YRETEMEC GNIKSA DIVAD OT WOLLOF UOY NEHW UOY SSAP MIH), OG OT GOD, EKORTS GOD, N, EKORTS GOD, EKORTS GOD, TEG ENOB, OG OT YM EVARG, TUP WOLLEY DRAC NO WEN HTAERW, TIAW ROF GOD, TEG HTAERW, OG OT TREB, TIAW ROF GOD, TREB WOLLOF EM, ANDE WOLLOF EM, OG OT DEHS, TREB TIAW 3 LLUP GNOL REVEL, ANDE WAIT 2 LLUP MEDIUM REVEL, DIVAD WAIT 1 PULL SHORT REVEL, NRUT LERRAB, LLUP EPOR (EHT GOD TSUM EB EREHT NEHW UOY OD TAHT), NI, TEG LLEB EOJ TEG HCTAW, DIVAD TIAW 1 HSUP NOTTUB, HSUP NOTTUB, (OD TAHT 2 EROM SEMIT), TIAW ROF LENOLOC, LENOLOC WOLLOF EM, OG OT TELOIV, EIT LLEB OT HSUB, TELOIV WOLLOF EM, S, S, EOJ TUP HCTAW NI ESAV, HTIDE WOLLOF EM, OG OT LAIDNUS, HTIDE TIAW 1 HSUP LAIDNUS, HSUP LAIDNUS, TEG NOMONG, OG OT LAIROMEM, EKAW EUTATS, OG OT LLAW, HSUP LLAW.........!

Part 2.

N, N, E, N, N, S, TIAW, N, N, N, N, E, EOJ W, N, E, HSUP LLAW, TIAW 3, HSUP LLAW, W, W, LOOC RETAW, TEG PAM, N, E, PORD PAM, E, TEG REPAP, W, PORD REPAP, EOJ TIAW 1 LLUP KRAMKOOB, LLUP KRAMKOOB, TEG BLUB, PORD BLUB, HSUP HCTIWS, W, TEG BLUB, TUP BLUB NI LIOF, TEG LIOF, TUP LIOF NI REDLOH, HSUP HCTIWS, E, U, U, TEG NI, TEG GULP, D, N, HSAMS RORRIM, EOJ TEG ESAC S D PORD ESAC U, S, U, LOOC GULP NO YDOB, D, NEPO LENAP, TEG TEKCOS, TUP TEKCOS NI LENAP, ESOLC LENAP, HSUP KCOLC, (UOY OD DEEN 1 EROM ECEIP FO ECNEDIVE TAHT I EVAH TON TEY DNUOF TUB I OD WONK WOH OT TRELA EHT YCNEGREME SECIVRES), D, W, HSUP ELTTOB, TAEH LOOP, LLUP SNAITRUC

Part 3.

W, OG OT NAV, TEG NI, (TIAW LITNU TI SYAS UOY ERA TA A NOITCNUJ NEHT OG TSEW LITNU UOY NAC TEG OT EHT YAH), TEG REYARPS, OG OT SERIW, TUP REYARPS NO SROTCENNOC, OG OT REKAERB, HCTIWS REKAERB, E, TIAW LITNU HARAS SI DNUOF TUO NEHT OG TSEW, U, U, W, TEG BLUB, UOY TSUM TCARTSID NHOJ 5 SEMIT. I EVAH DNUOF TUO EHT EVIF SYAW TUB I LLITS MEES OT NUR TUO FO SNOITCARTSID EROFEB NHOJ SEES EHT ECILOP. EHT EVIF SNOITCARTSID ERA GNIPPORD EHT BLUB ECNO UOY EVAH ENOD TAHT OG TSAE, D, D, D, TIAW ROF LESAEW, TIAW, NI, N, TIAW 3, TSEFINAM, TUC SEPOR, S, TIAW ROF LESAEW, HSUP REMMAH, TSEFINAM, HARAS EIT SEPOR OT LESAEW, TUO, U, HARAS EDIH DNA TIAW 10. EHT REHTO 5 SYAW ERA LLUP SNIATRUC, EGRAHC NHOJ, LLIHC NHOJ, HSUP RIATS. YPPAH GNITNUAH !!!!!!!!!

The maps and tips to Montezumas Revenge have made it this issue and they are supplied by Richard Hunter and Neville Westcarr from Leeds, but again there is no address so they will have to contact the magazine for their prizes.

The first three levels all have different layouts of the rooms but those after the third level have the same map as the third level.

All routes stay the same and all keys, doors, flames are found in the same rooms. The only difference are the number of darkrooms. On level 3, the bottom three layers of the pyramid are dark, level 4, the bottom four layers are dark and so on.

Your main priority on each level therefore is to recover a flame, as once captured all rooms become daylight.

QUICK E's ... QUICK E's ...

A good smattering of stuff from John Hubbock from Liverpool. Are your sandwiches and fizzy pop stowed safely? Right lets go!

Stay between 19 and 25 on the altimeter in **Blue Max** and then you can shoot the tanks with the machine gun if you keep your finger on the button.

In **International Karate** wait until the screen you want appears in the demo screen and then take the disk out and then press START or SELECT. When you are about to go onto the next level put the disk back in.

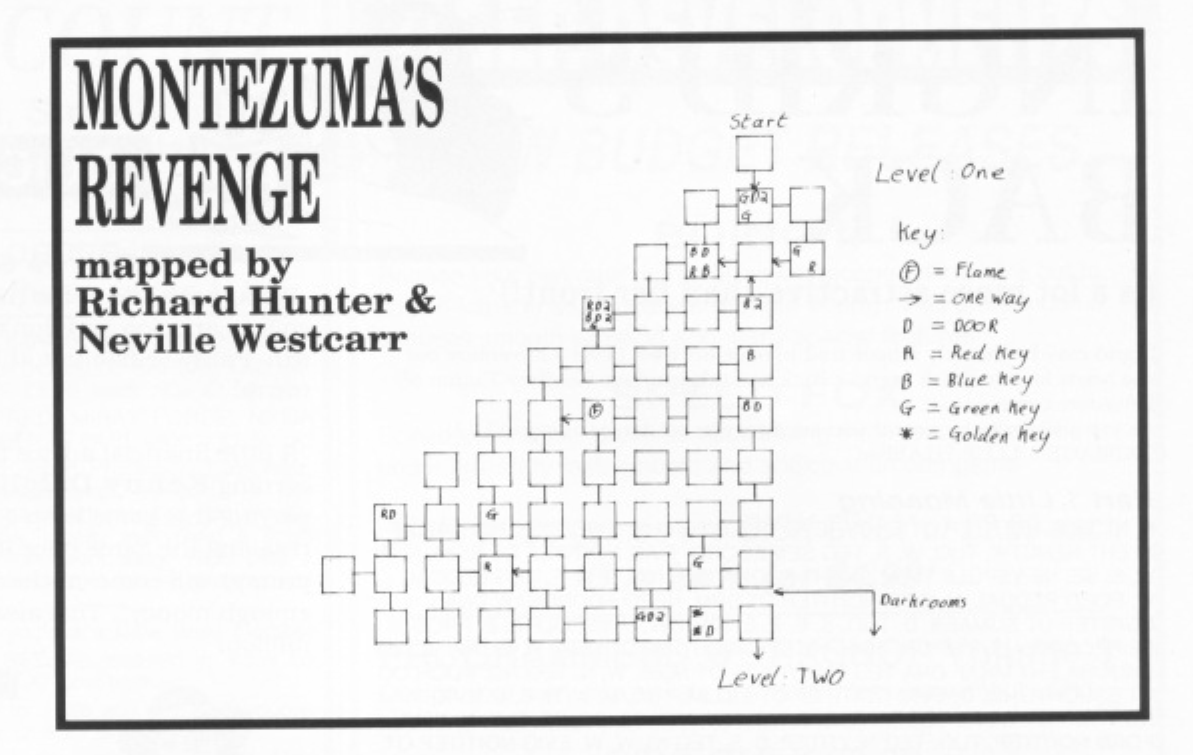
Use up all of your money on goal cards in **Footballer of the Year** until you are on your last £200 or so. Then buy an incident card and if you have "bad luck" on it then you won't have to pay your debts!

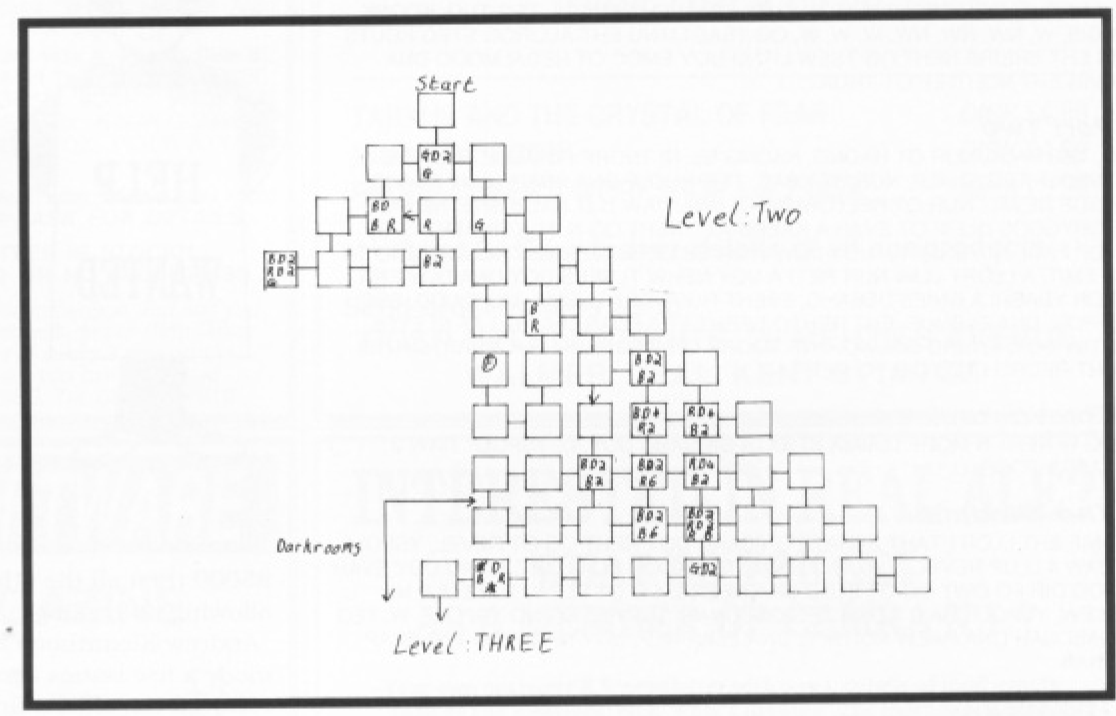
Now comes a tip for all of you that find that you can't beat the computer during the **Spy vs Spy** trilogy.

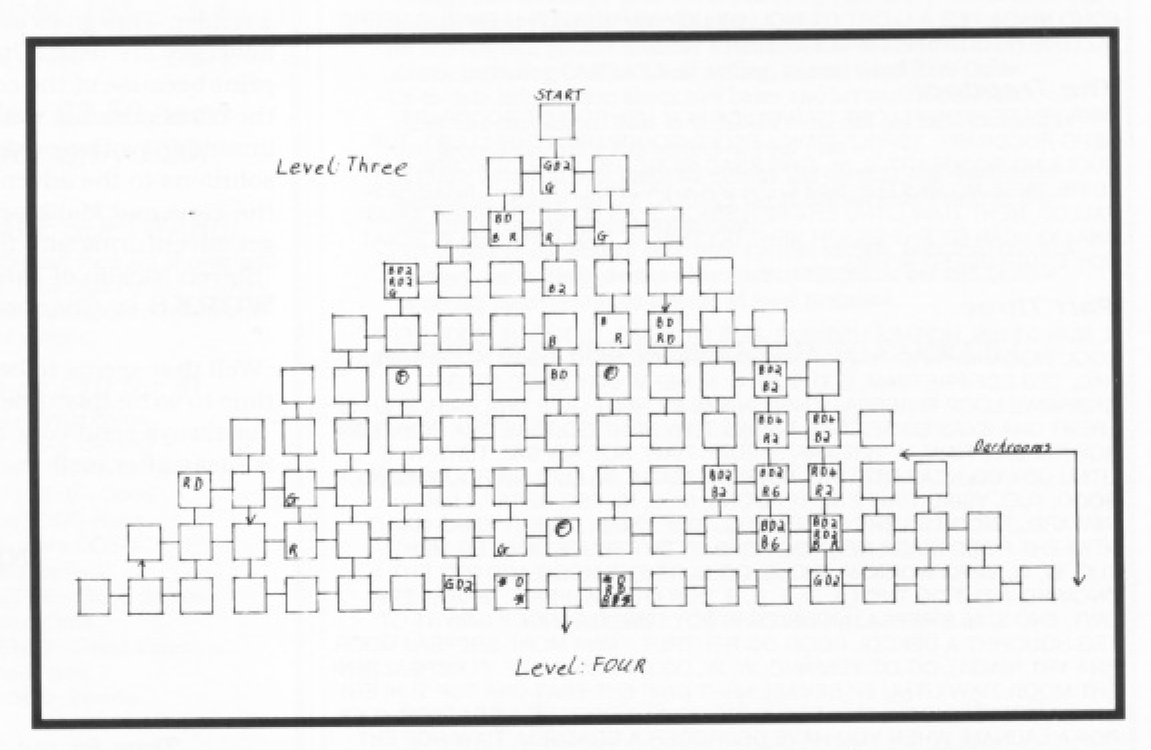
Spy vs Spy I - Let the other player collect all of the objects and when he has got them, go into the same room as him and fight him. If you fight him and win, collect the objects from the picture/table/desk in the room and go to the airport.

Spy vs Spy II (Island Caper) - If you don't have all of the objects and your opponent has the others, walk in the water and drown yourself. Doing it this way means that your opponent can't win and a very nice memorial service can be held in your honour.

More Quick E's over the page ☞







This must be Ingrid's front because Ingrid's Back is on the other side!

INGRID'S BACK



(is a lot more attractive than her front!)

Ingrid may be the only female troll to have her own Level 9 adventure but she needs help to finish Ingrid's Back and this is where Geoffrey Tanton of Belvedere comes into it.
As you will know by now if you are a regular reader, as always PULL CABBAGE = LLUP EGABBAC

Part 1 Little Moaning

N, NI, EVIG NOITITEP OT ENOYREVE TPECXE SALIS, T'NOD TEGROF AROLF NI EHT NEHCTIK, TUO, W, S, TEG SEIRECORG, EVIG NOITITEP OT SSIM, N, W, W, S, SE, NE,YSPOLF TIAW 2 NEHT KCONK, SW, NW, N, N, E, TEG REDDAL, W, PORD REDDAL, U, EVIG NOITITEP OT SRM, NEPO EDORDRAW DNA NOITITEP OT SUMAES, D, TUO, S, E, E, E, NW, NW, E, YSPOLF E, E, PROD SEIRECORG, LLUP EPOR, EDIH, NI, EVIG NOITITEP OT MRA, W, W, NW, E, OG DNUORA EHT MRAF DNA TEG ENOYREVE OT NGIS, W, N, TEG NO, KOOR OG OT ESUOHTGHIL, D, EVIG NOITITEP OT EILLIM, TUO, N, W, N, E, S, EVIG NOITITEP OT TANG, TEG NI, N, E, E, NW, NW, NW, SE, SE, SE, E, E, N, N, NI, PORD NOITITEP, TUO, TEG NOITITEP, S, S, TEG NI, W, W, EVIG NOITITEP OT YENOB (FI S'EH EREHT, FI TON TIAW LITNU EH SEMOC), TEG TUO, KCONK, NGIS, W, NW, NW, NW, W, W, W, OG TSAE LITNU EHT ALLIROG STEG KCUTS NI EHT SREIRB NEHT OG TSEW LITNU UOY EMOC OT NEDALMOOD DNA EVIG EHT NOITITEP OT TNUA......!

Part Two

D, TEG FAOL, NUR OT HAONG, HAONG EIL NI TNORF FO RELLORMAETS, YSPOLF TEG SNALP, NUR OT KSAC, TEG RUOLF DNA KSAC, LLUP EKARB, HSUP REVEL, NUR OT RELLORMAETS DNA TIAW LLIT SALIS SRETNE MOT-TOBYGGOS DLEIF OT EVAH A KAERB-AET NEHT OG N, N, KCIK MAD, S, S, TUP FAOL NI YENMIHC, UOY LLIW WON EB DERETSEP YB 7 SLLORT ENO TA A EMIT, A LLORT LLIW NUR RETFA UOY NEHW TI SEES UOY DNA UOY ERA TON YDAERLA GNIEB DESAHC, ESEHT RUOF ERA LUBMA, MURDLOD, SSEL-MROG, DNA ELBMUF, EHT REHTO EERHT ERA ENAB OHW SLLAF NI EVOL HTIW UOY, KNURD GGUHC, DNA TOGRE OHW SDRAUG EHT NRAB, SIHT SI EHT REDRO I TEG DIR FO MEHT NI

The Warren

OG W NEHT N MORF LUBMA STRATS GNISAHC UOY, D, YSPOLF TIAW 2 KAERB TOOR, D, U

The Windmill

DNIF EHT LLORT TAHT STRATS GNISAHC UOY NEHT OG OT REVEL, YSPOLF TIAW 4 LLUP REVEL, D, TUO, TEG NI, TUP KOOH NO LLORT, ECNO UOY EVAH TOG DIR FO OWT OG OT EULB DNA NEERG, OG OT LLEW, TUP EULB NI LLEW, YSPOLF TIAW 1 DNA TEG GABDNAH, TUP NEERG NO YSPOLF, W, TEG GABDNAH DNA RAEW KCITSPIL DNA EMUFREP, UOY NAC WON TEG TSAP ENAB

The Well

ECNO NIAGA TEG A LLORT OT WOLLOF UOY NEHT OG OT LLEW TUP NEERG NO LLORT, TUP NEERG NI LLEW

The Trapdoor

DNIF TEY REHTONA LLORT OT WOLLOF UOY NEHT OG OT ROODPART, NEPO ROODPART, YSPOLF TIAW 1 ESOLC ROODPART, HSUP LLORT, TUP RUOLF NO ROODPART, E, NI, EVIG KSAC OT GGUHC, NUR OT KCIRB, LLUP KCIRB, PEEK NO GNILLUP TUO EHT ESOOL SKCIRB LITNU EHT NRAB SES-PALLOC, NEHT TIAW LITNU EHT RETUPMOC SYAS UOY REBMEMER SALIS DNA OG KCAB OT EHT ESUOH NEHT DO THIS, U, TIAW LITNU SALIS SEKAT UOY E, TUP SDEED NI PAG.........

Part Three

N, NUR OT NIB, HCRAES HSIBBUR, NUR OT YSIAD, U, TUO, N, KOOL EERT, KOOL WODAHS, NI, U, TIAW LITNU FLUR SEMOC NEHT OG W, KOOL SESSAV-NAC, TEG ECEIPRETSAM, E, D, TUO, N, N, NEHW UOY EMOC OT EHT GNIMMIWS LOOP FI REPSAJ T'NSI GNIMMIWS NEHT OG E DNA EDIH, FI EH SI EREHT DNA SYAS EH SEICNAF A MIWS TIAW NEHT GO TSAE DNA EDIH, TIAW ROF REPSAJ, TIAW, N, TEG XAF, S, EDIH, TIAW, ROF REPSAJ, TIAW, W, S, LITNU UOY OG KCAB OTNI EHT NOISNAM NIAGA, W, KCOLNU ROOD, NEPO ROOD, TUO, YSIAD TIAW 2 NEHT KCONK, NI, U, NI, TEG REPAP, LLUP REWARD, T'NOD TEG EHT SBUTS, TUO, DNIF YSIAD, OD EHT EMAS GNIHT HTIW EHT ROOD NIAGA NEHT OG KCAB OT EHT SBUTS DNA TEG MEHT, TUO, W, W, NEPO WODNIW, TUO, E, OG NI OT EHT MOOR AND GET EHT DNOMAID, NEHT OG TUO OF TI, E, E, D, NUR OT ECALPERIF, (EREHT ERA OWT, ENO SI NI S'REPSAJ MOOR OS FI UOY DNIF FLESRUOY GNIYRT OT TEG HGUORHT A DEKCOL ROOD OG REHTRUF YAWA MORF SREPSAJ MOOR DNA YRT NIAGA), OG OT YENMIHC, W, W, OG OT ECALPERIF, FI REPSAJ SI NI EHT MOOR TIAW LITNU EH SEVAEL NEHT DNIF EHT EPAT DNA TUP TI NI EHT GNIREWSNA ENIHCAM, FI NI TBUOD FO WOH OT DROCER A EGASSEM KOOL ROF A LAUNAM. WHEN YOU HAVE DEDROCER A EGASSEM, TIAW ROF EHT ENOHP OT GNIR NIAGA NEHT SSERP YALP, TEG EPAT, OG OT TIARTROP, EVOM TIARTROP, EPYT 888155 (THE NUMBER IS THE CORRECT WAY ROUND. EIGHT, EIGHT, EIGHT, ONE, FIVE, FIVE), TEG STNUOCCA, OG KCAB OT EERT EUNEVA DNA EVAW, NUR OT REPSAJ, U, GNIWS, UOY EVAH TSUJ DETELPMOC SDIRGNI KCAB......!!!!

Sorry it's so small, but at least it isn't as small as this!

QUICK E's continued

Spy vs Spy III (Arctic Antics)

If you have one of the pieces and your opponent has the rest, go into an igloo and don't come out. Now your opponent can't win. Fairly selfish but at least you stay nice and cosy and warm.

A little financial advice from Steven Head of Willenhall concerning **Kenny Dalglish's Football Manager**. When playing this game keep a count of your money. Do not bother resaving the game once it reaches £99,999,999 because a prompt will come on the screen saying "you do not have enough money". This also happens World Soccer but at £10 million.



Quite a lot of help wanted this issue covering all sorts of problems.

John Hubbock needs, wants, nay pleads for help with **TEMPLE OF APSHAI, BOULDERDASH I and II**. To his plea for help with **PHANTOM** I can give him help by saying have a look at the past 2 or 3 issues of New Atari User for the hints you are after.

Dave W. of Birmingham needs help to explain what the Y and R are for in his inventory of **HACKER**. (Have a look at issue 52 Dave!) He also has a problem in that after visiting Switzerland and going on to Egypt and offering their Agent the chronograph he keeps refusing it, he'll only accept the $5000 then all the other countries agents go blank (freeze) allowing no trading.

Andrew Kleanthous from Birmingham is renewing the plea he made a few issues ago for help with **SNOWBALL**. I have received the official Snowball hint sheet from Level 9 sent in by a reader. This gives all of the locations and the objects and how they are used. Unfortunately the sheets are impossible to print because of the copyright rules and the printing of all of the clues possible would fill an entire issue of the Tipster (hmmm now there's an idea!). What I really need are complete solutions to the adventures and maps if possible like those of the Time and Majik series. What are you still reading this for get adventuring and mapping.

Steven Nicklin of Tamworth needs the solution to **WAXWORKS** by Channel 8, especially the bit with the airlock.

Well that seems to be all for now (and by eck did it take a long time to write this time! I must be getting old! (aaarrrggghhh!!!)). As always send your tasty morsels to the usual address which is:- (say after me!)

The Tipster
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Time for me to stick my head in a liquidiser

NO!!!!!!

(Well it was such a good movie)

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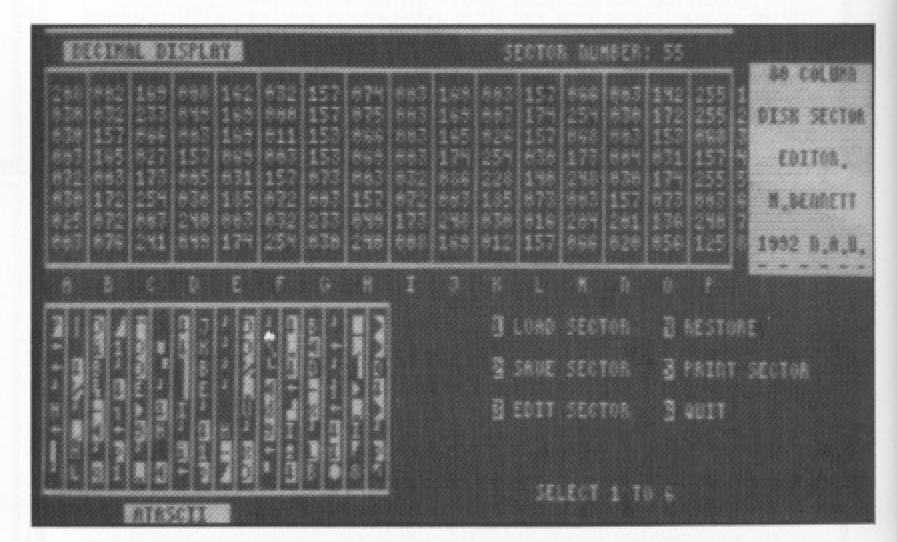
DISK SECTOR EDITOR in 80 column format

David Rawlings presents a practical application for his 80 column text routine in the last issue

To continue with the theme of 80 column text covered in the article and program in Issue 55, here's a program that allows you to view and edit individual sectors of a disk. It uses the extra space on screen to display the 128 bytes that make up one sector. At the top of the screen is the decimal display, and at the bottom the ATASCII display.

Being able to view the disk in this way is useful to search through adventures for clues or even look at machine code routines (If you can translate them from decimal). But this program allows the data to be loaded and edited, then saved in exactly the same place on the disk as if nothing had happened. This could allow last minute alterations to your machine code programs or if you dare, altering other peoples!

Before we go on let me stress a couple of things. Firstly, altering copyright material is not illegal, but trying to sell the edited program as your own work is! Secondly, whilst I use this program regularly and have had no trouble with it, please do not try to hold me or Page 6 publishing responsible for any damage the program might inadvertently cause to your disks. Some disks are copy protected and use complex archiving techniques, editing these can corrupt the disk entirely - You have been warned !.



BACK IT UP!

The safest way is to work on a back up copy if you can, and if you can't note down carefully any changes you make so it may be put right again! If I haven't scared you off with the last couple of paragraphs then I'll continue with the full instructions for the sector editor program.

Firstly type in the Sector editor listing and merge it with your original 80 column text set up routine (Issue 55). Then save it before running. When you run the program it will draw two boxes and display a simple menu.

Before you can go any further you must enter a sector number, you can't edit or save without first loading! After this you can choose from the menu by pressing keys 1 to 6.

1. **LOAD SECTOR:** As it implies this is to load a sector. You will be prompted for the sector number, either type the number and press Return or press escape to cancel the load request
2. **SAVE SECTOR:** You only have to save a sector if you have made any changes and wish them to be permanent. You do not have to put a sector back just because you loaded it! To make sure this is what you want you will be asked to confirm the save by hitting the "Y" key for yes. Any other key will be taken as no
3. **EDIT SECTOR:** The editing takes place on the decimal grid. On selecting this a box will be drawn in the top left hand corner. This is the cursor and it can be moved by using a joystick in port 1. Position the cursor over the number you wish to change and press Fire, and you will be prompted to enter the new value. Either type the new number and press Return or press Escape and this will take you back to the main menu. To exit this mode press Fire then Escape.
4. **RESTORE:** This option will change the sector on screen back to what it was before any editing took place. It's useful to put back the original sector if you have saved an edited one in it's place, but it will only change it back to what it was when you last loaded it using option 1
5. **PRINT SECTOR:** For printer users this will print the decimal display of the sector
6. **QUIT:** This will return you back to basic

The program is full of REM statements and these are for presentation and educational purposes only. This, and all my other programs, will work perfectly well without them.

Well that's it from me, now its your turn ! If you can think of any practical uses for the 80 column text, or better still write programs for it, then why not submit them and share it with the rest of us?

SECTOR EDITOR

```
CS 1 REM ##################################
JA 2 REM # EIGHTY COLUMN SECTOR EDITOR #
FU 3 REM #              by              #
GU 4 REM #        Matthew Bennett       #
SG 5 REM # ---------------------------- #
PZ 6 REM #  NEW ATARI USER - AUG '92    #
CY 7 REM ##################################
NN 8 REM
PA 10 GOSUB 3500
EF 20 GRAPHICS 8+16:CLR :CLOSE #1:OPEN #1
   ,4,0,"K:"
JG 30 POKE 1788,PEEK(88):POKE 1789,PEEK(8
   9)
HJ 40 POKE 710,131
IC 50 GOSUB 2000:REM SET UP SCREEN ETC
MF 60 GOTO 110
AZ 61 REM ----- MAIN MENU -----
RS 65 MESS=0:GOSUB 2300
FM 70 GET #1,K:IF K<48 OR K>55 THEN 70
TY 75 X=46:Y=22:L=16:GOSUB 2400
KI 80 K=K-48:ON K GOTO 110,300,1500,600,2
   920,100
TS 90 GOTO 70
NQ 100 END
QN 109 REM ----- LOAD SECTOR -----
TC 110 GOSUB 700
MH 120 TRAP 250
NC 130 POKE 769,1
QB 140 POKE 770,82
EO 150 POKE 779,INT(SECT/256)
HK 160 POKE 778,SECT-INT(SECT/256)*256
QX 170 MEM=ADR(SEC$)
GH 180 POKE 773,INT(MEM/256)
AD 190 POKE 772,MEM-INT(MEM/256)*256
BJ 200 Q=USR(1536)
PC 210 TRAP 38000:OLDSEC$=SEC$:GOSUB 1000
RL 220 GOSUB 1200
TK 230 GOTO 65
IB 240 REM ----- TRAP I/O ERROR -----
ZS 250 POP :MESS=4:GOSUB 2300
GU 260 GET #1,K
HS 270 X=42:Y=22:L=36:GOSUB 2400
DB 280 TRAP 40000:GOTO 65
OT 289 REM ---- SAVE SECTOR ----
ES 300 TRAP 250:MESS=5:GOSUB 2300
UN 305 GET #1,K:IF K<>89 THEN 380
SU 310 POKE 770,87
EK 320 POKE 779,INT(SECT/256)
HG 330 POKE 778,SECT-INT(SECT/256)*256
QT 340 MEM=ADR(SEC$)
GD 350 POKE 773,INT(MEM/256)
ZZ 360 POKE 772,MEM-INT(MEM/256)*256
BY 370 Q=USR(1536)
FU 380 X=42:Y=22:L=24:GOSUB 2400
DE 390 TRAP 40000:GOTO 65
QK 600 MESS=6:GOSUB 2300
TV 610 SEC$=OLDSEC$
MK 620 GOTO 210
BG 699 REM ---- INPUT SECTOR NO. ----
PH 700 MESS=3:GOSUB 2300
RJ 705 X=63:Y=22:GOSUB 800
OW 710 IF NUM=-1 THEN POP :X=42:Y=22:L=25
   :GOSUB 2400:GOTO 65
HI 715 SECT=NUM
GV 720 TEXT$=STR$(SECT)
YV 730 TEXT$(LEN(TEXT$)+1,LEN(TEXT$)+3)="
     @"
IM 740 Q=USR(30204,ADR(TEXT$),58,1)
DP 750 X=42:Y=22:L=30:GOSUB 2400
ZP 760 RETURN
ES 799 REM --- INPUT NUMBER ROUTINE ---
WT 800 NUM(1)=0:NUM(2)=0:NUM(3)=0:P=1
GG 810 TEXT$="■ @"
YP 820 Q=USR(30204,ADR(TEXT$),X,Y)
GU 830 GET #1,K
SO 835 IF K=27 THEN NUM=-1:RETURN
HC 840 IF K=155 THEN 900
TK 850 IF K=126 AND P>1 THEN X=X-1:P=P-1:
   GOTO 810
RI 860 IF K>=48 AND K<=57 AND P<=3 THEN 8
   80
QA 870 GOTO 830
FF 880 TEXT$(1,1)=STR$(K-48):TEXT$(2,2)="
   @":Q=USR(30204,ADR(TEXT$),X,Y)
BF 890 X=X+1:NUM(P)=K-48:P=P+1:GOTO 810
TC 900 IF P=2 THEN NUM=NUM(1):RETURN
XW 910 IF P=3 THEN NUM=10*NUM(1)+NUM(2):R
   ETURN
JU 930 NUM=100*NUM(1)+10*NUM(2)+NUM(3)
ZN 940 RETURN
AE 999 REM ----- DECIMAL PRINT -----
WP 1000 FOR C=0 TO 7
GY 1010 FOR L=0 TO 15
BN 1020 TEXT$="000@"
RL 1030 D=ASC(SEC$(C*16+L+1,C*16+L+1))
LY 1040 IF D<10 THEN P=3:GOTO 1070
BX 1050 IF D<100 THEN P=2:GOTO 1070
XI 1060 P=1
AC 1070 TEXT$(P,3)=STR$(D)
BG 1080 Q=USR(30204,ADR(TEXT$),L*4+1,C+3)
TP 1090 NEXT L:NEXT C
AB 1100 RETURN
IC 1199 REM ---- ATASCII PRINT ----
WT 1200 FOR C=0 TO 7
IG 1210 FOR L=1 TO 16
XZ 1220 X=L*2-1:Y=C+14
KU 1230 TEXT$(1,1)=SEC$(C*16+L,C*16+L)
KT 1240 TEXT$(2,2)="@"
UL 1250 Q=USR(30204,ADR(TEXT$),X,Y)
GS 1260 NEXT L
DA 1270 NEXT C
OA 1280 MESS=1:GOSUB 2300
BE 1290 RETURN
ZC 1499 REM ---- EDIT SECTOR ----
PH 1500 I=1:J=3
PZ 1510 MESS=7:GOSUB 2300
PF 1530 COLOR 1:PLOT I*4-2,J*8-1:DRAWTO I
    *4+12,J*8-1
EA 1540 PLOT I*4-2,J*8+8:DRAWTO I*4+12,J*
    8+8
HK 1550 IF STICK(0)=14 AND J>3 THEN GOSUB
     1600:J=J-1:GOTO 1530
VN 1560 IF STICK(0)=13 AND J<10 THEN GOSU
    B 1600:J=J+1:GOTO 1530
EN 1570 IF STICK(0)=11 AND I>1 THEN GOSUB
     1600:I=I-4:GOTO 1530
FP 1580 IF STICK(0)=7 AND I<61 THEN GOSUB
     1600:I=I+4:GOTO 1530
NI 1590 IF STRIG(0)=0 THEN 1625
TO 1595 GOTO 1550
OM 1600 COLOR 0:PLOT I*4-2,J*8-1:DRAWTO I
    *4+12,J*8-1
DT 1610 PLOT I*4-2,J*8+8:DRAWTO I*4+12,J*
    8+8
AR 1620 RETURN
```

continued

SECTOR EDITOR

```
VE 1625 X=42:Y=22:L=32:GOSUB 2400
QS 1630 MESS=8:GOSUB 2300
TB 1640 X=70:Y=22:GOSUB 800
WM 1650 X=38:Y=22:L=41:GOSUB 2400
NK 1660 IF NUM>255 THEN GOTO 1770
IU 1670 IF NUM<0 THEN GOSUB 1600:POP :GOT
   O 65
BV 1700 TEXT$="000@"
EZ 1710 IF NUM<10 THEN P=3:GOTO 1740
YS 1720 IF NUM<100 THEN P=2:GOTO 1740
XN 1730 P=1
CE 1740 TEXT$(P,3)=STR$(NUM)
MF 1750 Q=USR(30204,ADR(TEXT$),I,J)
OM 1760 P=((I+3)/4)+(J-3)*16
ER 1770 SEC$(P,P)=CHR$(NUM)
UM 1780 TEXT$(1,1)=CHR$(NUM)
LS 1790 TEXT$(2,2)="@"
VW 1800 Y=J+11:X=I/2+0.5
UL 1810 Q=USR(30204,ADR(TEXT$),X,Y)
QF 1820 GOTO 1510
IP 1999 REM ---- SET UP DISPLAY ----
TW 2000 DIM TEXT$(80),DEL$(80),SEC$(128),
   OLDSEC$(128),NUM(3)
ST 2010 COLOR 1:FOR T=0 TO 1
NR 2020 PLOT 1,3+T:DRAWTO 257,3+T
VB 2030 PLOT 1,18+T:DRAWTO 257,18+T
XY 2040 PLOT 1,92+T:DRAWTO 257,92+T
WS 2050 PLOT 1,107+T:DRAWTO 129,107+T
MO 2060 PLOT 1,179+T:DRAWTO 129,179+T
KC 2070 NEXT T
RQ 2080 FOR T=1 TO 257 STEP 16
WD 2090 PLOT T,19:DRAWTO T,92
JJ 2100 NEXT T
SO 2110 FOR T=1 TO 129 STEP 8
HG 2120 PLOT T,107:DRAWTO T,179
JS 2130 NEXT T
QV 2150 RESTORE 2800:FOR T=0 TO 17
JM 2160 READ X,Y,TEXT$
UQ 2170 Q=USR(30204,ADR(TEXT$),X,Y)
KH 2180 NEXT T
RS 2182 FOR T=1 TO 16:TEXT$(2,2)="@"
WF 2184 TEXT$(1,1)=CHR$(T+64):X=T*4-2:Y=1
   2
CI 2186 Q=USR(30204,ADR(TEXT$),X,Y):NEXT
   T
FQ 2188 FOR T=1 TO 8:TEXT$(2,2)="@"
SW 2190 TEXT$(1,1)=CHR$(T+48):X=65:Y=T+2
BV 2192 Q=USR(30204,ADR(TEXT$),X,Y):NEXT
   T
ZU 2199 REM --- CLEAR SECTORS$ ---
YG 2200 SEC$(1)="♥":SEC$(128)="♥"
TA 2210 SEC$(2)=SEC$
AS 2220 OLDSEC$=SEC$
MQ 2230 RESTORE 2260
TH 2239 REM ----- I/O M/C CODE -----
UJ 2240 FOR T=0 TO 3:READ A:POKE 1536+T,A
   :NEXT T
AT 2250 RETURN
BV 2260 DATA 104,76,83,228
OF 2299 REM --- PRINT MESSAGE ---
DC 2300 RESTORE 2900+MESS
JB 2310 READ X,Y,TEXT$
UF 2320 Q=USR(30204,ADR(TEXT$),X,Y)
AP 2330 RETURN
OV 2399 REM ----- DELETE TEXT -----
KI 2400 DEL$(1)=" ":DEL$(80)=" ":DEL$(2)=
   DEL$
WQ 2410 DEL$(L,L+1)="@@"
EE 2420 Q=USR(30204,ADR(DEL$),X,Y)
AR 2430 RETURN
KZ 2799 REM ---- INITAIL TEXT ----
SG 2800 DATA 2,1, DECIMAL DISPLAY @
MQ 2810 DATA 43,1,SECTOR NUMBER:@
BL 2820 DATA 42,14,1 LOAD SECTOR @
PN 2830 DATA 42,16,2 SAVE SECTOR @
LS 2840 DATA 42,18,3 EDIT SECTOR @
MV 2850 DATA 58,14,4 RESTORE @
WC 2860 DATA 58,16,5 PRINT SECTOR @
FV 2865 DATA 58,18,6 QUIT @
TB 2870 DATA 66,2,  80 COLUMN    @
GX 2875 DATA 66,3,               @
WE 2880 DATA 66,4, DISK SECTOR   @
HM 2881 DATA 66,5,               @
HF 2882 DATA 66,6,   EDITOR.     @
IW 2883 DATA 66,7,               @
KT 2884 DATA 66,8,  M.BENNETT    @
KG 2885 DATA 66,9,               @
OL 2886 DATA 66,10, 1992 N.A.U.  @
FY 2890 DATA 66,11, - - - - - -  @
ZH 2899 REM ----- MESSAGES -----
TD 2900 DATA 46,22,SELECT 1 TO 6 @
SY 2901 DATA 8,23, ATASCII @
SR 2903 DATA 42,22,ENTER SECTOR NUMBER >@
LS 2904 DATA 42,22, DISK ERROR !!  - HIT A
   NY KEY @
AE 2905 DATA 42,22,SAVING SECTOR OK? (Y/N
   ) @
MG 2906 DATA 48,22,RESTORING...@
KT 2907 DATA 42,22,SELECT BYTE AND PRESS
   FIRE @
KP 2908 DATA 38,22,ENTER NEW BYTE OR PRES
   S ESCAPE >@
VZ 2909 DATA 42,22, PRINT ERROR !  - HIT A
   NY KEY @
YV 2910 REM --- PRINTER DUMP ---
NP 2920 TRAP 3200
KG 2925 LPRINT "  SECTOR NO.";SECT
AJ 2930 GOSUB 3400
FL 2940 FOR T=1 TO 8
FV 2950 FOR C=1 TO 16
BY 2960 B=ASC(SEC$(T*16-16+C,T*16-16+C))
OK 2970 TEXT$(C*4-3,C*4)="*000"
HR 2980 IF B<10 THEN P=3:GOTO 3010
XM 2990 IF B<100 THEN P=2:GOTO 3010
WS 3000 P=1
QC 3010 TEXT$(C*4-3+P,C*4)=STR$(B)
CJ 3020 NEXT C
AN 3030 TEXT$(65,65)="*"
KQ 3040 LPRINT T;" ";TEXT$(1,65)
JX 3050 NEXT T
AB 3060 GOSUB 3400
PT 3070 TEXT$(1)=" ":TEXT$(80)=" ":TEXT$(
   2)=TEXT$
MB 3080 FOR T=1 TO 16
SL 3090 TEXT$(T*4-2,T*4-2)=CHR$(64+T)
JK 3100 NEXT T
UP 3110 LPRINT "   ";TEXT$(1,64)
TN 3120 GOTO 65
NE 3200 MESS=9:GOSUB 2300:GOTO 260
GY 3400 TEXT$(1)="*":TEXT$(80)="*":TEXT$(
   2)=TEXT$
ZY 3410 LPRINT "  ";TEXT$(1,65)
AP 3420 RETURN
```

SERIOUS STUFF FROM APX

tested out by Paul Rixon

ENHANCED POKEY PLAYER

The Pokey Player music system was first published in 1982 in the (now defunct) American publication Softside. It was originally intended as a simple utility to add 'Donkey Kong' style music to games programs. The editing process wasn't exactly easy to use but it was deemed satisfactory for the creation of short songs. Even so, Pokey Player gained enormous popularity with users who just wanted to compose and play their own music.

Since the initial release the program and documentation have been updated several times, culminating in the publication of Enhanced Pokey Player by Antic Publishing (who, sadly, are also no longer with us). Pokey is, of course, the piece of silicon inside your Atari that produces noise (in addition to handling serial comms and keyboard decoding - hence named after POrt/KEYboard controller). The aim of Pokey Player is to give you full access to the wide variety of sounds that Pokey can generate.

In order to enter, edit and 'debug' your potential sonic masterpieces you have to use three different programs supplied on the disk - the Editor, Compiler and VMerge respectively. Having completed a composition, you can run it back through the Pokey Player, another separate module of the system. The Editor lets you enter notes using the joystick for each of three possible 'voices' in your music source file. You can insert, delete and replace notes as required, finally saving the whole lot to disk. The next stage involves compiling each voice into the compacted format expected by the Player - typically one byte per note. This also highlights any problems, such as notes out of range. Once you have three compiled files, you must run VMerge to produce the final playable output file. If all this seems rather a rigmarole - it is! Still, with some careful planning the results can be worthy of the effort.

The documentation is (necessarily) extensive and is divided into eight sections covering everything you could conceivably need to know about composing music with your Atari - from the theory of electronic music to programming hints on how to merge tunes with your own Basic code. As with most of Antic's disks, you can view or print this information.

Enhanced Pokey Player feels a bit aged by modern day standards but it well deserves its place in computer history. Treat it as an adventure and you won't go wrong!

ENHANCED POKEY PLAYER is available from Gralin Internmational on disk only at £5

SHERLOCK 1050

Sherlock 1050 is basically the disk user's equivalent of the DIY enthusiast's toolbox. It's a disk utility program with numerous facilities to examine, modify, search and generally fiddle with the contents of your floppies.

The program is menu driven and therefore quite simple to use, though it's recommended that you take some time to study the documentation before experimenting with your disk collection. In any case, you should always make a back-up of any disk you're about to explore, to avoid any embarrassing mishaps! Coincidentally, Sherlock incorporates an 'intelligent' disk copying function, its speciality being to read as many sectors in each pass as the memory space will allow. A format utility is supplied to prepare disks for use with the copy routine - this is faster than the normal DOS format, since it doesn't need to prepare the DOS sectors and disk directory areas (as these are copied over anyway).

One of the main options is a sector dump. This asks you to enter the sector number (in hexadecimal) that you want to view. The ASCII and hex representation is duly displayed, and you can skip onto the next or previous sectors or dump the current information to your printer. From here you can also launch straight into edit mode, which is one of Sherlock's most powerful - and potentially dangerous - abilities. You can modify any sector in hex or ASCII mode, perhaps to try some of those handy game cheats described by Harvey Kong Tin (Issue 29), or just to 'personalise' your software. To help you keep track of where you are on a disk, there's a Disk Map option which graphically reveals the entire contents.

For those who are confident with assembly language - or who want to learn - the disk disassembler will rip apart the hidden secrets of programs in a jiffy! Again there are print options so you can inspect the results at a leisurely pace. A disk search is another extremely useful function and here again Sherlock doesn't fail to deliver. You can search for hex codes or ASCII character strings and when a match is found, you can choose to print, edit or even disassemble the appropriate sector.

All I can say is that if you use a disk drive and you don't have a suite of utilities similar to those offered by Sherlock 1050, it could be time to make amends!

SHERLOCK 1050 is available from Gralin International on disk only at £5

VAREDIT

Ever been stuck with a program that you have lost track of because your variables don't make sense? Richard Lewis has a utility that allows you to change variables after your program has been written

While writing programs in Basic I have often found that I wanted to change the name of a variable. I would have variables like V, X or S$ and I wanted them to have a more meaningful name. Also I try to standardise the names of variables, e.g. not have CUR_VAR, VARI_TYP, VARIABLE$ but instead have CUR_VAR, VAR_TYPE, VAR$. I decided to write a program that would allow me to change the name of variables.

My first attempts involved altering the variable names while the program was loaded but this proved very tricky to do. If the new name had the same number of characters then it was easy but if the name was to be shortened or lengthened then problems started. I also had to find space to put the code, the Basic part and the machine code routines.

I eventually wrote a separate program that would allow me to edit the variable names of a saved program. Since space was not going to be cramped I was able to put in a lot of features. About the only feature I did not put in was a Search and Replace function which I left out because if used incorrectly it could cause untold damage to a program.

SOME BACKGROUND

Before getting down to typing in and using the program some background information will help to understand just what the program has to do and how to use it. First we will look at how Atari Basic stores programs with the information found in two highly recommened books - De Re Atari and Mapping the Atari. Then we will look at the differences in Turbo Basic which I found out while writing this program. Finally I will show how to use the program and how to it works.

ATARI BASIC

Atari Basic has only three types of variables: Numerics, Arrays and Strings.

A saved Basic program consists of four parts. The first part consists of seven memory pointers. The second is the variable name table which is a list of the names of all the variables. The third is the variable value table which records what type each variable is and it's dimensioned size. The variable number is also stored here - each variable has a different number starting at zero for the first variable. The last part is the statement table, this is the actual program stored in tokenised form.

When the program is loaded and run two extra tables are added. There is the string and array table which contains the characters in all the strings and the values in the arrays. Finally there is the runtime stack. When the program executes a GOSUB, the current position in the program is stored in the runtime stack, so that the program can return there when the RETURN is executed; the same goes for FOR NEXT loops.

The seven pointers are stored in memory locations 128 to 141 along with two extra pointers in locations 142 to 145. These pointers point to where each of the tables begins.

Memory Location	Pointer
128,129	Start of memory used by Basic
130,131	Start of variable name table
132,133	End of variable name table + 1
134,135	Start of variable value table
136,137	Start of statement table
138,139	Current statement in statement table
140,141	Start of string and array table
142,143	Start of runtime stack
144,145	End of memory used by Basic

You can use these pointers to look at the tables; load a program and type this command:

In Turbo Basic

```
BPUT #0, DPEEK(130), DPEEK(132)-DPEEK(130)-1
```

if you are using Atari Basic type

```
Y=PEEK(130)+256*PEEK(131): FOR X=Y TO
PEEK(132)+256*PEEK(133)-Y-1: PUT#0, PEEK(X);: N.X)
```

and you will see the names of all the variables. The last character of each name is in inverse video.

The variable value table contains eight bytes for each variable. The first byte is the type byte which indicates what type of variable it is, the second is the variable number and the last six bytes are the value or dimension of the variable.

If the variable is a numeric then the type byte is zero and the six bytes are the value of the numeric in Binary Coded Decimal

format.

If the variable is an array then the type is 65 if the array has been dimensioned or 64 if the array has not been dimensioned. Of the six bytes, the first two point to where the array values are stored in the string and array table, the second two bytes are the first dimension of the array and the last two are the second dimension of the array if it is two dimensional.

If the variable is a string then the type is 129 if the string has been dimensioned or 128 if the string has not been dimensioned. Of the six bytes, the first two point to where the string characters are stored in the string and array table, the second two bytes is the length of the string and the last two are the dimensioned length.

TURBO BASIC

To be compatible with Atari Basic Turbo Basic stores its programs in the same way using the same pointers and tables. Turbo Basic has three additional types of variables: Procedures, Line Label and Unassigned. The names of these additional variables are stored in the variable name table with the other variables but they have different entries in the variable value table.

If the variable is a procedure then the type is 193. Of the six bytes, the first two point to where the procedure starts in the statement table. This is a memory location not a line number. Using memory locations is faster than using line numbers, e.g. if you have a line with GOSUB 800 then the program will look for line 800 by starting at the beginning of the program and going through each line number until it finds line 800, while an EXEC procedure will go straight to the position in the statement table to get the line.

If the variable is a label then the type is 194. Of the six bytes, the first two point to where the label is in the statement table which is also a memory location.

If there is a line in the program executing a procedure that does not exist or going to a line label that does not exist then that procedure or label is unassigned. If you enter the DUMP command then the name appears with an ? e.g.

```
DUMP
INIT PROC 1930
SAVE_ERR # 1890
UNASSIGN ?
```

You cannot have a line label and procedure with the same name. If you do try, then the second variable will overwrite the first. However you can have a numeric and a label/procedure with the same name.

Program overleaf ☞

VAREDIT USER GUIDE

The program which is going to have its variable table edited has to be saved on a disk and the disk should have as much free space as the size of the program to be edited. This is because the program is read in, edited, the altered version is saved onto the disk and then the old version is deleted. The disk should not have a file called TTTTTTTT.TTT.

Run the VAREDIT program and enter the file name of the program to be edited. You are then presented with the first variable, number zero. You can now change the variable names. To change the name just type in the new name and press enter. There are several commands to help you find the variables to be changed.

+n	advances you the number n variables (e.g. +6, +20 or +999)
-	goes back one variable
-n	goes back n variables
***F**	finds a variable name. Enter the full name of the variable when asked and if there is such a variable you will be taken to it. The search starts from the next variable
***S**	searches for a string of letters. Enter the string and you will be taken to the next variable whose name contains the string if there is one. The search starts from the next variable
***R**	repeat last command. This repeats the last command that was not a name change. This is to be used with *S when you wish to change several variables. Use *S to search for the first occurrence of the string, change it, if necessary, then use *R to find the next occurrence
***M**	show memory usage. This shows the free memory, by how much the total length of the variable table has changed and the number of free sectors that will be left when the new version has been saved to disk
***LN**	list only numerics. Only numeric variables will be displayed and searched for. Also the very first and last variables will be displayed regardless of what type of variable is to be listed. The border colour will change to indicate that you are in list mode
***LA**	list only arrays
***LS**	list only strings
***LP**	list only procedures
***LL**	list only labels
***LU**	list only unassigned
***L**	list all types
***X**	exit the program and save the the changes to the variable table
***Q**	quit the program and do not save the changes

You can set the names, of two variables which are the same type to be the same. When you load the program to run it, Basic will still treat them as different variables even though you will not be able to tell them apart during a listing. If you then LIST the program to a disk file then ENTER it then both variables will become one variable.

You can rename a numeric variable to something entirely different. For example rename "CUR_LEN" to "CUR_END_POS - CUR_START_POS + %1". Then when you LIST and ENTER the program that variable will no longer be there but replaced by the expression. You have to remove any lines that contained CUR_LEN= to something else.

You should always have a copy of the program you are going to change until you are used to how it works. You can cause a lot of damage to a program if you set two variables to the same name

VAREDIT

```
EX 1 REM ###################################
YB 2 REM #            VAREDIT             #
MD 3 REM #               by               #
VZ 4 REM #          Richard Lewis         #
HX 5 REM #         in Turbo Basic         #
HD 6 REM # ------------------------------ #
LL 7 REM # NEW ATARI USER - AUG 1992      #
FE 8 REM ###################################
AY 10 REM
VR 20 EXEC INIT:EXEC MAIN:EXEC TERM:END
HY 30 ------------------------------
UD 40 PROC MAIN
RQ 50   DO :CUR_START_POS=VAR_PT(CUR_VAR)
   :CUR_END_POS=VAR_PT(CUR_VAR+%1)-%1:CUR
   _LEN=CUR_END_POS-CUR_START_POS+%1
BC 60     EXEC FIND_TYPE:EXEC DISPLAY_NAM
   E:EXEC SET_DEF
BG 70     ? CUR_VAR;:IF CUR_VAR=%0 OR CUR
   _VAR=MAX_VAR:INPUT "= ",LINE$:ELSE :IN
   PUT "- ",LINE$:ENDIF
XI 80     IF LINE$="" THEN LINE$="+"
XU 90     IF LINE$="*R" AND OLD_LINE$<>""
    THEN REP_FLAG=%1:LINE$=OLD_LINE$
ZC 100      CH$=LINE$(%1,%1)
BH 110      IF CH$="+" OR CH$="-" OR CH$="
   *"
JP 120        IF LEN(LINE$)>%1:LINE2$=LINE
   $(%2,LEN(LINE$)):CH2$=LINE2$(%1,%1):EL
   SE :LINE2$="":CH2$="":ENDIF
RF 130        IF CH$="+" THEN LET DIRECTIO
   N=%1:EXEC MOVE
PS 140        IF CH$="-" THEN LET DIRECTIO
   N=-%1:EXEC MOVE
BE 150        IF CH$="*":IF CH2$="X" OR CH
   2$="Q" THEN EXIT
CF 160          IF CH2$="S" THEN EXEC SEAR
   CH_LETTER
XB 170          IF CH2$="F" THEN EXEC FIND
   _NAME
QA 180          IF CH2$="M" THEN EXEC MEMO
   RY
OU 190          IF CH2$="L" THEN EXEC LIST
   _TYPE
QJ 200        ENDIF
ET 210        OLD_LINE$=LINE$:REP_FLAG=%0
RJ 220      ELSE :IF NOT REP_FLAG THEN EXE
   C CHANGE_NAME
RR 230      ENDIF
ZH 240      IF CUR_VAR<%0 THEN CUR_VAR=%0
NJ 250      IF CUR_VAR>MAX_VAR THEN CUR_VA
   R=MAX_VAR
CZ 260    LOOP
VY 270 ENDPROC
PF 280 ------------------------------
FB 290 PROC FIND_TYPE:VAR_TYPE=%1
CX 300   DO :IF PEEK(VALUE_ADR+CUR_VAR*8)
   =VAR_TYPE(VAR_TYPE) OR VAR_TYPE>6 THEN
    TYPE_DIM=%0:EXIT
WR 310      IF PEEK(VALUE_ADR+CUR_VAR*8)=V
   AR_TYPE(VAR_TYPE,%1) THEN TYPE_DIM=%1:
   EXIT
FB 320      VAR_TYPE=VAR_TYPE+%1
CU 330    LOOP
VT 340 ENDPROC
PA 350 ------------------------------
QG 360 PROC SET_DEF:POKE 694,%0:POKE 702,
   64:POKE 710,%0:POKE 709,10:POKE 82,%0:
   POKE 83,39:ENDPROC
PE 370 ------------------------------
JN 380 PROC GET_REPLY:REPEAT :GET REPLY:U
   NTIL REPLY=NN OR REPLY=YY:PUT REPLY:?
   :ENDPROC
PI 390 ------------------------------
GK 400 PROC DISPLAY_NAME:? CUR_VAR;:IF CU
   R_VAR=%0 OR CUR_VAR=MAX_VAR:? "= ";:EL
   SE :? "- ";:ENDIF
ZK 410   IF CUR_LEN>%1 THEN ? VAR$(CUR_ST
   ART_POS,CUR_END_POS-%1);
WI 420     ? CHR$(ASC(VAR$(CUR_END_POS))+12
   8);" - ";VAR_TYPE$(VAR_TYPE*24+TYPE_DI
   M*12-23,VAR_TYPE*24+TYPE_DIM*12-12)
VS 430 ENDPROC
OZ 440 ------------------------------
YX 450 PROC CHANGE_NAME
EP 460   LET NEW_LEN=LEN(LINE$):LET NEW_E
   ND_POS=CUR_START_POS+NEW_LEN-%1:DIF_LE
   N=NEW_LEN-CUR_LEN:REPLY=YY:VALID=%1
AA 470   IF NEW_LEN=%1 AND (VAR_TYPE=%1 O
   R VAR_TYPE=%2) THEN VALID=%0
IF 480   FOR STR_PT=%1 TO NEW_LEN:CHAR=AS
   C(LINE$(STR_PT)):IF CHAR>127 THEN LINE
   $(STR_PT,STR_PT)=CHR$(CHAR+128)
ZR 490      IF VALID
DY 500        IF STR_PT=%1:IF CHAR<65 OR C
   HAR>90 THEN VALID=%0
GP 510        ELSE
VK 520          IF STR_PT<NEW_LEN:IF (CHAR
   <65 OR CHAR>90) AND (CHAR<48 OR CHAR>5
   7) AND CHAR<>95 THEN VALID=%0
FX 530          ELSE
CS 540            IF VAR_TYPE=%2:IF CHAR<>
   40 THEN VALID=%0
KD 550            ELSE
PX 560              IF VAR_TYPE=%3:IF CHAR
   <>36 THEN VALID=%0
NL 570              ELSE :IF (CHAR<65 OR C
   HAR>90) AND (CHAR<48 OR CHAR>57) AND C
   HAR<>95 THEN VALID=%0
RK 580              ENDIF
DU 590            ENDIF
UJ 600          ENDIF
QP 610        ENDIF
RT 620      ENDIF
PZ 630    NEXT STR_PT
ID 640    IF NOT VALID:? "The variable nam
   e is not a valid name.  Do you want to
    change the name to this  name (Y/N)";
DT 650      EXEC GET_REPLY
YB 660    ENDIF
YI 670    IF REPLY=YY
FM 680      IF DIF_LEN<>%0 THEN FOR NEW_VA
   R=CUR_VAR+%1 TO MAX_VAR+%1:VAR_PT(NEW_
   VAR)=VAR_PT(NEW_VAR)+DIF_LEN:NEXT NEW_
   VAR
SS 690      IF DIF_LEN>%0 THEN -MOVE VAR_A
   DR+CUR_END_POS,VAR_ADR+NEW_END_POS,LEN
   _VAR-CUR_END_POS
PX 700      IF DIF_LEN<%0 THEN MOVE VAR_AD
   R+CUR_END_POS,VAR_ADR+NEW_END_POS,LEN_
   VAR-CUR_END_POS
WQ 710      LEN_VAR=LEN_VAR+DIF_LEN:VAR$(C
   UR_START_POS,NEW_END_POS)=LINE$
NK 720      VAR$(NEW_END_POS,NEW_END_POS)=
   CHR$(ASC(LINE$(NEW_LEN))+128):LINE2$="
   1":LET DIRECTION=%1:EXEC MOVE
XW 730    ENDIF
VX 740 ENDPROC
PE 750 ------------------------------
HG 760 PROC MOVE
JH 770   IF LINE2$="":CUR_VAR=CUR_VAR+DIR
   ECTION
UP 780   ELSE :TRAP #MOVE_ERR:X=VAL(LINE2
   $):CUR_VAR=CUR_VAR+DIRECTION*X
LT 790     # MOVE_ERR:TRAP NO_TRAP
XR 800   ENDIF
JC 810   IF LIST_TYPE
ZJ 820     DO :EXEC FIND_TYPE:IF VAR_TYPE
   =LIST_TYPE THEN EXIT
KM 830       IF DIRECTION=%1 AND CUR_VAR>
   =MAX_VAR THEN EXIT
DC 840       IF DIRECTION=-%1 AND CUR_VAR
   <=%0 THEN EXIT
YS 850       CUR_VAR=CUR_VAR+DIRECTION
TV 860     LOOP
```

```
YF 870    ENDIF
WG 880 ENDPROC
PN 890 ------------------------------
DO 900 PROC SEARCH_LETTER:IF NOT REP_FLAG
    THEN EXEC SET_DEF:INPUT "Search Lette
   rs";SEARCH$
KF 910    IF SEARCH$<>"":SEARCH_POS=CUR_EN
   D_POS:SEARCH_LEN=LEN(SEARCH$):OLD_VAR=
   CUR_VAR
UN 920       DO :LET NEW_POS=UINSTR(VAR$(%1
   ,VAR_PT(MAX_VAR+%1)),SEARCH$,SEARCH_PO
   S):IF NEW_POS=%0 THEN CUR_VAR=OLD_VAR:
   EXIT
HN 930         LOW_VAR=%0:UP_VAR=MAX_VAR+%1
ZI 940         WHILE UP_VAR-LOW_VAR)%1:LET
   NEW_VAR=INT((UP_VAR+LOW_VAR)*0.5)
LU 950           REM ? LOW_VAR,NEW_VAR,UP_V
   AR
VX 960           IF VAR_PT(NEW_VAR)<=NEW_PO
   S:LOW_VAR=NEW_VAR
PK 970           ELSE :UP_VAR=NEW_VAR
VC 980           ENDIF
IS 990         WEND
LY 1000         IF VAR_PT(UP_VAR)>=NEW_POS+
   SEARCH_LEN:CUR_VAR=LOW_VAR:IF NOT LIST
   _TYPE THEN EXIT
BI 1010           EXEC FIND_TYPE:IF VAR_TYP
   E=LIST_TYPE THEN EXIT
UI 1020         ENDIF
KY 1030         SEARCH_POS=NEW_POS
TE 1040       LOOP
WV 1050    ENDIF
YU 1060 ENDPROC
XX 1070 ------------------------------
TX 1080 PROC FIND_NAME
SI 1090    IF NOT REP_FLAG:EXEC SET_DEF:IN
   PUT "Find Word ";SEARCH$
ID 1100      IF SEARCH$<>"" THEN SEARCH_LE
   N=LEN(SEARCH$):SEARCH$(SEARCH_LEN,SEAR
   CH_LEN)=CHR$(ASC(SEARCH$(SEARCH_LEN))+
   128)
WL 1110    ENDIF
HO 1120    IF SEARCH$<>"":SEARCH_POS=CUR_E
   ND_POS:OLD_VAR=CUR_VAR
RP 1130       DO
KS 1140         IF SEARCH$=VAR$(VAR_PT(CUR_
   VAR),VAR_PT(CUR_VAR+%1)-%1)
OY 1150           IF NOT LIST_TYPE:EXIT
LU 1160           ELSE :EXEC FIND_TYPE:IF V
   AR_TYPE=LIST_TYPE THEN EXIT
BH 1170           ENDIF
VC 1180         ENDIF
WM 1190         CUR_VAR=CUR_VAR+%1:IF CUR_V
   AR>MAX_VAR THEN CUR_VAR=OLD_VAR:EXIT
SW 1200       LOOP
WN 1210    ENDIF
YM 1220 ENDPROC
XP 1230 ------------------------------
MF 1240 PROC MEMORY:? :? MEMORY-VAR_PT(MA
   X_VAR+%1);" bytes free  ";:DIF_LEN=LEN
   _VAR-OLD_LEN_VAR:IF DIF_LEN>%0 THEN ?
   "+";
GN 1250    ? DIF_LEN;" bytes  ";FILE_FREE_
   LEN-FILE_LEN;" sectors":?
YY 1260 ENDPROC
YB 1270 ------------------------------
HT 1280 PROC LIST_TYPE:IF LINE2$="L" THEN
    POKE 712,%0:LET LIST_TYPE=%0
CO 1290    IF LINE2$="LN" THEN POKE 712,16
   :LET LIST_TYPE=%1
AX 1300    IF LINE2$="LA" THEN POKE 712,48
   :LET LIST_TYPE=%2
KZ 1310    IF LINE2$="LS" THEN POKE 712,80
   :LET LIST_TYPE=%3
FR 1320    IF LINE2$="LU" THEN POKE 712,12
   8:LET LIST_TYPE=4
XX 1330    IF LINE2$="LP" THEN POKE 712,16
   0:LET LIST_TYPE=5
YQ 1340    IF LINE2$="LL" THEN POKE 712,22
   4:LET LIST_TYPE=6
AE 1350    IF VAR_TYPE<>LIST_TYPE THEN LET
    DIRECTION=%1:LINE2$="0":EXEC MOVE
ZA 1360 ENDPROC
YD 1370 ------------------------------
DX 1380 PROC LOAD
NC 1390    DO :TRAP #DISK_ERR:CLOSE :INPUT
    "File Name";SOURCE$
PD 1400       IF NOT INSTR(SOURCE$,":") THE
   N LINE$="D:":LINE$(%3)=SOURCE$:SOURCE$
   =LINE$
CK 1410       LEN_PATH=LEN(SOURCE$)
GG 1420       DO :CH$=SOURCE$(LEN_PATH,LEN_
   PATH):IF CH$="\" OR CH$="<" OR CH$=">"
    OR CH$=":" THEN EXIT
HX 1430         LEN_PATH=LEN_PATH-%1:IF LEN
   _PATH<=%0 THEN EXIT
TM 1440       LOOP
MW 1450       DEST$=SOURCE$:DEST$(LEN_PATH+
   %1)="TTTTTTTT.TTT"
SE 1460       CLOSE :OPEN #%2,6,%0,SOURCE$:
   INPUT #%2;LINE$
AE 1470       IF LINE$(14,14)<>"0":FILE_LEN
   =VAL(LINE$(15,17))
CX 1480         SOURCE$(LEN_PATH+%1)=LINE$(
   %3,10)
KX 1490         FOR STR_PT=LEN(SOURCE$) TO
   LEN(SOURCE$)-8 STEP -%1:IF SOURCE$(STR
   _PT,STR_PT)=" " THEN SOURCE$(STR_PT)="
   "
EZ 1500         NEXT STR_PT
GG 1510         IF LINE$(11,11)<>" "
QF 1520           SOURCE$(LEN(SOURCE$)+%1)=
   ".":SOURCE$(LEN(SOURCE$)+%1)=LINE$(11,
   13)
AB 1530           FOR STR_PT=LEN(SOURCE$) T
   O LEN(SOURCE$)-8 STEP -%1:IF SOURCE$(S
   TR_PT,STR_PT)=" " THEN SOURCE$(STR_PT)
   =""
YH 1540           NEXT STR_PT
VB 1550         ENDIF
RL 1560         REPEAT :INPUT #%2;LINE$:UNT
   IL LINE$(14,14)="0"
VY 1570         EXEC SET_DEF:REPLY=YY:FILE_
   FREE_LEN=VAL(LINE$)
JC 1580         IF FILE_FREE_LEN<FILE_LEN*1
   .1:? "The file ";SOURCE$;" uses ";FILE
   _LEN;" sectors"
IN 1590           ? "but there are only ";F
   ILE_FREE_LEN;" sectors on the":? "disk
   ."
EZ 1600           ? "Do you still wish to e
   dit the variables (Y/N) ?";:EXEC GET_R
   EPLY
UR 1610         ENDIF
DO 1620         IF REPLY=YY:? :? "Loading "
   ;SOURCE$;" variables":CLOSE #%2:OPEN #
   %2,4,%0,SOURCE$
SQ 1630           FOR PROG_PT=%0 TO 6:GET #
   %2,X,Y:PROG_PT(PROG_PT)=X+256*Y:NEXT P
   ROG_PT
IV 1640           LEN_VAR=PROG_PT(%3)-PROG_
   PT(%1):LEN_PROG=PROG_PT(6)-242:LEN_VAL
   UE=PROG_PT(4)-PROG_PT(%3)
FX 1650           LEN_STATMENT=LEN_PROG-LEN
   _VAR-LEN_VALUE-14:OLD_LEN_VAR=LEN_VAR
OX 1660           BGET #%2,VAR_ADR,LEN_VAR:
   BGET #%2,VALUE_ADR,LEN_VALUE
OX 1670           VAR_PT(%0)=%1:CUR_VAR=%0:
   STR_PT=%0
VB 1680           REPEAT :IF PEEK(VAR_ADR+S
   TR_PT)>127 THEN VAR_PT(CUR_VAR+%1)=STR
   _PT+%2:CUR_VAR=CUR_VAR+%1
```

continued

VAREDIT

```
UA 1690            STR_PT=STR_PT+%1
VR 1700          UNTIL STR_PT>=LEN_VAR
ND 1710          MAX_VAR=CUR_VAR-%1:CUR_VA
   R=%0:EXIT
UW 1720        ENDIF
ZA 1730        # DISK_ERR:? "Disk Error ";
   ERR;" on line ";ERL
TS 1740      ENDIF
AT 1750    LOOP
LT 1760    TRAP NO_TRAP:EXEC MEMORY
ZL 1770 ENDPROC
YO 1780 ------------------------------
YY 1790 PROC SAVE:TRAP #SAVE_ERR:? "Savin
   g variables":DIF_LEN=LEN_VAR-OLD_LEN_V
   AR
YE 1800    FOR PROG_PT=%2 TO 6:PROG_PT(PRO
   G_PT)=PROG_PT(PROG_PT)+DIF_LEN:NEXT PR
   OG_PT
GA 1810    OPEN #%1,8,%0,DEST$:FOR PROG_PT
   =%0 TO 6:PUT #%1,PROG_PT(PROG_PT) MOD
   256,PROG_PT(PROG_PT) DIV 256:NEXT PROG
   _PT
DJ 1820    BPUT #%1,VAR_ADR,LEN_VAR:BPUT #
   %1,VALUE_ADR,LEN_VALUE
LX 1830    DO
YA 1840      IF LEN_STATMENT>MEMORY:BGET #
   %2,VAR_ADR,MEMORY:BPUT #%1,VAR_ADR,MEM
   ORY:LEN_STATMENT=LEN_STATMENT-MEMORY
KP 1850      ELSE :BGET #%2,VAR_ADR,LEN_ST
   ATMENT:BPUT #%1,VAR_ADR,LEN_STATMENT:E
   XIT
UA 1860      ENDIF
BB 1870    LOOP
WY 1880    CLOSE :DELETE SOURCE$:DEST$(LEN
   (DEST$)+%1)=",":DEST$(LEN(DEST$)+%1)=S
   OURCE$(LEN_PATH+%1):RENAME DEST$:GO# S
   AVE_OK
IL 1890    # SAVE_ERR:CLOSE :? "Save Error
    ";ERR;" on line ";ERL
DB 1900    # SAVE_OK:TRAP NO_TRAP
YX 1910 ENDPROC
YA 1920 ------------------------------
FN 1930 PROC INIT:POKE 559,%0:GRAPHICS %0
   :EXEC SET_DEF:POKE 712,%0:POKE 559,34
XI 1940    DIM SOURCE$(64),DEST$(64),LINE$
   (120),LINE2$(119),CH$(%1),CH2$(%1),OLD
   _LINE$(120),SEARCH$(120),VAR_TYPE$(169
   )
ZN 1950    DIM PROG_PT(8),VAR_PT(256),VALU
   E$(2048),VAR_TYPE(7,%1)
CV 1960    MEMORY=FRE(%0)-200:DIM VAR$(MEM
   ORY):VAR$(MEMORY)=" ":VALUE$(2048)=" "
QL 1970    READ NO_TRAP,NN,YY
CR 1980    FOR X=%0 TO 6:FOR Y=%0 TO %1:RE
   AD Z:VAR_TYPE(X,Y)=Z:NEXT Y:NEXT X
QI 1990    READ VAR_TYPE$:READ LINE$:VAR_T
   YPE$(97)=LINE$
BU 2000    VAR_ADR=ADR(VAR$):VALUE_ADR=ADR
   (VALUE$)
KB 2010    EXEC LOAD
YJ 2020 ENDPROC
XM 2030 ------------------------------
VB 2040 PROC TERM:POKE 712,%0:IF LINE$="*
   X" THEN EXEC SAVE
YS 2050 ENDPROC
XV 2060 ------------------------------
WD 2070 DATA 40000,78,89
NP 2080 DATA 0,0,0,0,65,64,129,128,192,19
   2,193,193,194,194
UE 2090 DATA numeric     numeric     arra
   y       array undim string      string
    undimunassigned  unassigned  .
WE 2100 DATA procedure   procedure   labe
   l       label       ??????      ??????
```

VAREDIT PROGRAM STRUCTURE

PROCEDURES

The program consists of the Initialisation procedure, the Main procedure and then the Termination procedure.

MAIN

This procedure is a loop with the user entering a command each cycle. CUR_VAR is the number of the variable being displayed. Line 80 deals with the user just pressing return. Line 90 deals with "*R" by using the old command and setting a flag. Lines 240 to 250 deal with moving beyond the limits of the number of variables.

FIND_TYPE

Finds the type of variable and whether the variable has been dimensioned.

SET_DEF

Sets all the default pokes.

GET_REPLY

Gets a Y or N answer.

DISPLAY_NAME

Displays the name and type of a variable.

CHANGE_NAME

Uses the name entered by the user to change the current variable name. Line 460 sets the flags. Lines 470 to 630 validate the new name, if the name is not valid then the flag VALID is set to zero. Also inverse video characters are converted to normal video. Lines 640 to 660 deals with a invalid name by asking if the name is to be accepted. Lines 680 to 720 alters the variable table. Line 720 also moves to the next variable.

MOVE

Lines 770 to 800 deal with moving forwards or backwards. Lines 810 to 870 deal with only listing particular types.

SEARCH_LETTER

This procedure searches for a string of letters. If the command is not being repeated Line 900 gets the string to be searched for. Lines 920 to 1040 search for the string. Line 920 searches for string in the variable string.

Lines 930 to 990 find which variable the found string belongs to, it is a binary tree search. Line 950 will print the lower limit, middle and upper limit. Lines 1000 to 1020 check the string, first to see that it does not lie across two names and that it is of the correct type. Line 1030 continues the search if the string was wrong.

FIND_NAME

Searches the variable names for a particular name. Lines 1090 to 1110 get the searched for word if the command has not been repeated. Lines 1130 to 1200 searches for the word.

MEMORY

Displays the free memory.

LIST_TYPE

Sets the list type flag. Line 1340 will advance to the next variable of the correct type. Setting LINE2$ to "0" will cause no advance if the current variable is of the correct type.

LOAD

This procedure loads the variable and value table from the source file. Line 1400 adds a drive to the file name if necessary. Lines 1410 to 1440 finds what part of the file name is the path and what is filename (so the VAREDIT can deal with any DOS). Line 1450 sets up the destination file name on the save drive and path as the source file. Lines 1460 to 1470 check to see if the source file exists. Lines 1480 to 1550 deal with wildcards (* or ?) in the filename. Lines 1560 to 1570 find how much free space there is on the disk. Lines 1580 to 1610 warn the user if there is a risk of running short of space.

Lines 1620 to 1720 load the variable tables. Lines 1670 to 1700 find where each variable name starts in the string of variable names.

SAVE

Saves the altered variables and copies the rest of the program. Line 1800 updates the program pointers. Lines 1810 to 1820 saves the variable tables. Lines 1830 to 1870 copies the rest of the program. Line 1870 deletes the source file and renames altered file.

INITIALISATION

Sets up the strings, arrays and constants and then loads the variables.

TERMINATION

Saves the program if necessary.

VARIABLES

VARIABLE NUMERICS

CUR_VAR - the number of the current variable, that is the one being displayed and edited
CUR_START_POS - the start position of the current variable in VAR$
CUR_END_POS - the end position of the current variable in VAR$
CUR_LEN - the length of the name of the current variable
VAR_TYPE - the type of the current variable
DIM_TYPE - whether the current variable has been dimensioned
NEW_VAR - the number of the new variable
NEW_END_POS - the new end position of the current variable
NEW_LEN - the length of the new name of the current variable
OLD_VAR - the old current variable number
LOW_VAR - the lower variable number in the binary sort
UP_VAR - the upper variable number in the binary sort
SEARCH_LEN - the length of SEARCH$
LIST_TYPE - the type of variable to be listed by the *L command
DIF_LEN - a difference in length
SEARCH_POS - the position in VAR$ to start a search
STR_PT - a pointer to a position in a string
CHAR - the ASC value of a character in a string
LEN_PATH - the position in SOURCE$ where the filename starts
FILE_LEN - the size of the file to be edited in sectors
FILE_FREE_LEN - the number of free sectors on the disk for the new file
LEN_VAR - the length of the variable name table
OLD_LEN_VAR - the original length of the variable name table
LEN_VAL - length of the variable value table
LEN_STATEMENT - the length of the statement table
PROG_PT - pointer to PROG_PT(
X, Y, Z - general counters
REPLY - the response the user makes to a yes no question
DIRECTION - the direction of a move command

PARAMETERS

MAX_VAR - the highest variable number
MEMORY - the size of VAR$, that is the memory available
VAR_ADR - the address of VAR$
VALUE_ADR - the address of VALUE$

CONSTANT NUMERICS

NN - ASC "N"
YY - ASC "Y"
NO_TRAP - a invalid line number to clear the traps

FLAGS

VALID - the name is a valid name
REP_FLAG - the command is being repeated

STRINGS

VAR$ - the variable name table and buffer for copying the rest of the program being edited
VALUE$ - the variable value table
VAR_TYPE$ - the descriptions of all the variable types
SOURCE$ - the source filename
DEST$ - the destination filename
LINE$ - the command entered by the user
**CH$, LINE2$, CH2$** - parts of LINE$
OLD_LINE$ - the last command
SEARCH$ - the string to be searched for

ARRAYS

PROG_PT(- the seven program pointers, memory locations 128 to 151
VAR_PT(- the pointers to where each variable name starts in VAR$. The last pointer, MAX_VAR + 1, points to the end of the names
VAR_PT(- the values in the variable value table that correspond to each variable type.

COMMANDS

<ret> - just pressing return advances you to the next variable
+ - advances you one variable

Ian Finlayson's

TUTORIAL TIME

PRESENTATION TRICKS

Making it look better

In the summer the deadline for copy for the magazine seems to come upon me even faster than at other times. You would think that two months between editions of the magazine would be plenty of time to have an article prepared, but I always end up getting it all together at the last minute.

This time I have a trio of little subroutines which may be useful to you. They have all been the result of enquiries which have been sent to me by readers who have had problems, and in each case I have written a short self contained program to illustrate the point. They are all about quite different details of Basic programming.

CENTRE TEXT

This subroutine illustrates a bit of Atari string handling. It is designed to take any string up to 37 characters long and centre it on the screen. I have chosen 37 as the normal width of a line in Graphics 0 is 38 characters, but if you print a 38 character string on a line it automatically causes a line space when the cursor drops to the next line, so 37 is a convenient maximum. If you reset the left margin to zero (by POKE 82,0) the line becomes 40 characters long and your string can be 39 characters. Conversely if you are in a different graphics mode you may only have 20 characters on a line and you will have to adjust the maximum string length to 19. If you follow the description of the example program it should not be too difficult to tailor it to your own needs.

Line 20 dimensions the three strings we are going to use, then sets the variable centre equal to 100 (the line number of the centring subroutine) and makes BLANK$ equal to a string of 37 spaces.

Lines 30,40 and 50 make NAME$ equal in turn to the first and second line of a two line instruction and then takes a keyboard input. Each time the centre subroutine is called to centre it up and display it on screen.

Line 60 loops back to line 30 to repeat the process.

The centring subroutine starts at line 100 by clearing LINE$.

Line 110 gets the length of the string NAME$ and if it is longer than 37 characters changes it to a new instruction line "37 CHARACTERS MAXIMUM, PLEASE " which is 30 characters long, so N is put equal to 30.

Line 120 checks to see if the string length is even or odd. If it is even the program jumps to line 140, otherwise an extra blank character is added to the string in line 130. LINE$ is 37 characters long so the middle character is the 19th.

Line 140 inserts the characters of NAME$ evenly spaced before and after character 19 of LINE$, then Line 150 prints the result on screen.

BOTTOM LINE

It is sometimes useful to have an instruction line, comment line or title line across the bottom of the screen when something else is being displayed above. But the screen has a nasty habit of scrolling up when the bottom line is complete and this is a nuisance as part of the display is lost off the top. There are one or two things to remember.

First, if a PRINT (or ?) command is followed by a semi-colon the cursor will wait at the end of the printed line for the next PRINT command rather than dropping down and starting a new line. Second, even if you do put a semi-colon after the PRINT command, if the line is full of text the cursor will move to the next line and if you are on the last line of the screen everything will scroll up one line.

Third, although the cursor can be switched off by POKE 752,1 (POKE 752,0 turns it on again) it is still present in an invisible form. So even when the cursor is inhibited space at the end of the bottom line must be left for it.

The listing merely shows the two cases. First, without the semi-colon, the bottom line moves up. Then, when the semi-colon is added it stays in place at the bottom of the screen.

ROUNDING DOLLARS AND CENTS (OR POUNDS AND PENCE)

In the last New Atari User Ann O'Driscoll wrote about the INTeger function (amongst other numeric functions). INT rounds any number down to the nearest whole number by stripping off everything after the decimal point. That is fine if you always want to round to a whole number, and if you always want to round down. But what about money?

Just as the penny is one hundredth of a pound and the cent one hundredth of a dollar, many currencies deal in hundredths of the main money unit. When this is printed there are two digits after the decimal point. It is also quite common to

```
WO 1 REM ******************************
CR 2 REM *     TUTORIAL SUBROUTINES     *
FO 4 REM *          CENTER TEXT         *
XU 5 REM *              by              *
CO 6 REM *         Ian Finlayson        *
OG 7 REM *----------------------------*
XB 8 REM * NEW ATARI USER - AUG 1992   *
WW 9 REM ******************************
AY 10 REM
RA 20 DIM LINE$(38),NAME$(38),BLANK$(38):
   CENTER=100:BLANK$="
                    "
KM 30 NAME$="INPUT THE WORD OR PHRASE":GO
   SUB CENTER
JN 40 NAME$="TO BE CENTERED":GOSUB CENTER
CH 50 ? :INPUT NAME$:GOSUB CENTER:?
SF 60 GOTO 30
HX 99 REM ***SUBROUTINE TO CENTER A
          ***STRING ON A LINE
QP 100 LINE$=BLANK$
HS 110 N=LEN(NAME$):IF N>37 THEN NAME$="3
   7 CHARACTERS MAXIMUM ,PLEASE ":N=30
NC 120 IF N/2=INT(N)/2 THEN 140
MQ 130 N=N+1:NAME$(N,N)=" "
BE 140 LINE$(19-N/2,19+N/2)=NAME$
JK 150 ? :? LINE$:RETURN
```

Above - the routine for centring text on screen

Bottom right - using the bottom line without making the screen jump

Top right - rounding currency to the correct two decimal points

round to the nearest whole number rather than always rounding down. So how can we achieve these things in Basic?

To round to the nearest whole number instead of rounding down all we have to do is cheat a little. Push the original number up by just a bit less than 0.5 and the result is that all decimal parts of a unit up to and including 0.5 will be rounded down and anything greater will be rounded up. Use 0.49999999 (add as many nines as you need to improve accuracy!!) and then apply the INT function to remove the unwanted bits. This is what happens:

0.5+0.49999999 = 0.99999999 this rounds to 0 while
0.51+0.49999999 = 1.09999999 rounding to 1.

But this is still rounding to the nearest whole number - what about the pence (or cents). Again we have to apply a little mathematical trickery. First multiply by 100 - this turns the pence into whole numbers. Then take the INTeger - this rounds off anything less than whole pence. Finally divide the result by 100 to get the pence back behind the decimal place.

The short listing shows all this in a small example. First it does a simple interest calculation with two preset values and rounds the result, then it asks you to input a capital sum and interest rate and calculates the interest.

If you program in Basic and want help pease write describing your problem in as much detail as possible. Send an example on disk or tape if you can and a stamped envelope for a reply and I will try to help. My address is:

Ian Finlayson, 60 Roundstone Crescent, East Preston, West Sussex, BN16 1DQ

```
WO 1 REM ******************************
CR 2 REM *     TUTORIAL SUBROUTINES     *
SV 4 REM * ROUNDING PENCE (OR CENTS)   *
XU 5 REM *              by              *
CO 6 REM *         Ian Finlayson        *
OG 7 REM *----------------------------*
XB 8 REM * NEW ATARI USER - AUG 1992   *
WW 9 REM ******************************
AY 10 REM
PZ 20 ? "K↓EXAMPLE":X=312.33:Y=9.5:GOSUB
   50:? "↓NOW YOU CAN TRY"
TE 30 ? :? "ENTER CAPITAL ";:INPUT X:? :?
    "ENTER INTEREST RATE ";:INPUT Y:GOSUB
    50:GOTO 30
ZI 48 END
YC 49 REM *** DISPLAY INPUT AND RESULTS
HT 50 ? :? :? "      $";X;" AT ";Y;" % PER
    ANNUM"
BG 60 AMOUNT=X*Y/100:? :? "GIVES ";AMOUNT
   ;" INTEREST"
OJ 70 GOSUB 100
CD 80 ? :? "          ";AMOUNT;" TO THE NEARE
   ST CENT"
ZZ 90 RETURN
RE 99 REM *** SUBROUTINE TO ROUND TO TWO
          *** DECIMAL PLACES
KL 100 AMOUNT=AMOUNT*100
YK 110 AMOUNT=INT(AMOUNT+0.4999999)/100
ZB 120 RETURN
```

```
WO 1 REM ******************************
CR 2 REM *     TUTORIAL SUBROUTINES     *
CJ 4 REM *       BOTTOM LINE DEMO       *
XU 5 REM *              by              *
CO 6 REM *         Ian Finlayson        *
OG 7 REM *----------------------------*
XB 8 REM * NEW ATARI USER - AUG 1992   *
WW 9 REM ******************************
AY 10 REM
RD 20 DIM LINE$(38):LINE$="THIS LINE HAS
   EXACTLY 37 CHARACTERS *":POSITION 2,23
   :? "K"
BW 30 POSITION 2,23
UE 40 ? LINE$
UM 50 POSITION 2,10:? "THIS IS HOW IT USU
   ALLY PRINTS             ":GOSUB 100
ZI 60 POSITION 2,23:? LINE$;
WU 70 POSITION 2,10:? "THIS IS BETTER, WI
   TH THE SEMI COLON  ":GOSUB 100
ZN 98 END
NR 99 REM *** KEYPRESS SUBROUTINE
HD 100 OPEN #1,4,0,"K:":? "↓PRESS A KEY":
   GET #1,K
HB 120 CLOSE #1:RETURN
```

CIRCLING AROUND

Ann O'Driscoll explains some of the mysteries of the maths commands built in to Atari Basic

While Atari Basic doesn't have any CIRCLE command, we can draw circles quite easily using the SIN and COS functions. This article sets out to explain what these commands - plus the Atari's other trigonometric functions - are all about.

SOME DEFINITIONS

Starting with the basics, the circle shown in the diagram has a radius (distance from centre to edge) of 1 unit. The two lines which meet in the centre are called the axes: The horizontal line is the X axis and the vertical line is the Y axis. We find the circumference (distance around the edge) of a circle by multiplying the diameter (width) by a fixed number called PI (pronounced "pie"). This means that our circle has a circumference of 2PI. For the moment we can take it that PI=22/7 or 3.14 approximately; we'll see later how we can use the computer to work out its exact value.

SIN and COS

SIN and COS are functions which measure what happens when a point moves around the circumference of a circle. We start from the "3 o'clock" position ("a" on the diagram) and move in an anti-clockwise direction. COS (for "cosine") measures how far to the right of the Y axis the point is and SIN (for "sine") measures how far it is above the X-axis. The measuring is done by reference to the angle the point makes with the centre of the circle. For instance, when the point is at "P" on the diagram it forms a triangle which makes an angle "A" with the centre. In our circle with its radius of 1 unit, the sine of angle A - SIN(A) - is defined as being equal to the length of line S and the cosine of angle A - COS(A) - is defined as being equal to the length of line C. Of course, if we change the radius then these measurements, which depend on the length of the radius, will change too. For instance, if the radius was halved, then the sine and cosine lengths would have to be doubled to bring them to whole units. Similarly, if we say the radius is equal to 2 units then the sine and cosine lengths would have to be halved to express them in terms of single units. In general, to enable us to cope with a radius of any length, we define SIN(A) as being equal to S/R and COS(A) as being equal to C/R, where S and C are the lengths of the lines and R is the length of the radius.

MEASURING SYSTEMS

Looking again at the diagram, when the imaginary point has moved a quarter way around the circumference the distance travelled is PI/2 (point b), halfway is PI (point c), three quarters is 3PI/2 (point d) and a full turn is 2PI, our circumference. This measurement system, which looks at distance travelled vis a vis circumference length, is called the RADIAN system. We can also use the DEGREE system: For instance, the point moves through 90 degrees from a to b, 180 degrees from a to c, 270 degrees from a to d and 360 degrees in a complete turn. The Atari normally uses the RADIAN system. The command DEG tells it to measure in degrees instead and the RAD command returns it to radians. The conversions can also be done manually, as 2PI radians = 360 degrees.

OTHER FUNCTIONS

The TAN of an angle (short for "tangent") is defined as being equal to its sine divided by its cosine. Together, SIN COS and TAN are called the trigonometric functions. Their inverses are called ARCSINE, ARCCOSINE and ARCTANGENT. These tell us the values that have given rise to a particular sine, cosine and tangent. For instance, the sine of 30 degrees (or PI/6 radians) is 0.5 so the arcsine of 0.5 is 30 degrees. The Atari has a function which returns the arctangent of a number, called ATN. This is fairly useful, as it enables us to work out a value for PI. Going back to the circle in the diagram, when our point forms an angle of 45 degrees with the centre its tangent (i.e. SIN/COS) is 1 because the lengths of C and S are the same at this point. It follows that ATN(1)=45 degrees. Since 45 degrees = PI/4 radians, PI=4*ATN(1).

THE PROGRAM

The first part of the listing uses the trigonometric functions to draw a circle on a Graphics 7 screen. Line 100 sets the co-ordinates for the circle's centre (X and Y), determines the radius length (R) and puts the computer into degree mode. The drawing routine works like this:- The co-ordinates of point P on the diagram are X+C, Y+R where X and Y are the centre of the circle. COS(A)=C/R so C=R*COS(A). Similarly, SIN(A)=S/R so S=R*SIN(A). We can thus rewrite the co-ordinates of P as P=X+R*COS(A),Y+R*SIN(A). The FOR NEXT loop simply plots the points associated with successively increasing values for angle A, starting with 0 and going right around to 360 degrees. Incidentally, the circle is plotted in a clockwise, rather than an anti-clockwise, direction because the screen's row or "y" values increase as you move from top to bottom. This differs from the normal Y axis convention shown in the diagram, where points above the centre are greater than those below.

In this circle, the size of the step in Line 130 determines the number of angles to be plotted. Lowering the step value will plot more points and reduce the space between them to get a smoother line. Another way would be to plot an initial point on the edge and then use the DRAWTO command to join up the points around the circumference. The second part of the listing uses this method to draw an ellipse, which is just a circle which has been pulled out along the X or Y axes into some sort of cigar shape. Line 220 plots the starting point and then the FOR NEXT loop draws to successive points around the edge, using the same principles as before. This time however, COS(A) is multiplied by a constant to elongate the circle along the X axis.

The final bit of the listing draws a sine wave at the end of the screen. This shows the sine values for different angles in the 0 to 360 degree (2PI) range. As Line 330 instructs the computer to calculate in radians, the ATN function is used here to define a value for PI. The "troughs" in the wave reflect negative values for SIN(W) - As sine measures how far above the X axis a point is, its value will be negative for points below the X axis ("c" to "a" on the diagram). A COS(W) graph would show troughs for the same reason: Cosine measures distance to the right of the Y axis so COS is less than 0 in the "b" to "d" area of the diagram.

```
CS 1 REM ##########################################
JU 2 REM #    TRIGONOMETRIC FUNCTIONS    #
FU 3 REM #              by               #
GV 4 REM #         Ann O'Driscoll        #
SG 5 REM # ----------------------------- #
RU 6 REM # NEW ATARI USER - AUGUST '92 #
CY 7 REM ##########################################
NN 8 REM
EX 100 REM  [1]: A BASIC CIRCLE
OB 120 GRAPHICS 7:DEG :X=20:Y=25:R=20
YC 125 COLOR 1
BO 130 FOR A=0 TO 360 STEP 6
KI 140 PLOT X+R*COS(A),Y+R*SIN(A)
CZ 150 NEXT A
CS 200 REM  [2]: AN ELLIPSE
HN 210 X=100:Y=20:R=10
YM 215 COLOR 2
NW 220 PLOT X+R*3,Y
SU 230 FOR A=0 TO 360 STEP 10
QG 240 DRAWTO X+R*COS(A)*3,Y+R*SIN(A)
DA 250 NEXT A
QA 300 REM  [3]: SINE WAVES
AY 320 RAD :PI=4*ATN(1)
ZA 325 COLOR 3
LM 330 PLOT 0,60
JZ 340 FOR W=0 TO PI*10 STEP 0.5
CD 350 DRAWTO W*3,SIN(W)*3+60
LP 360 NEXT W
```

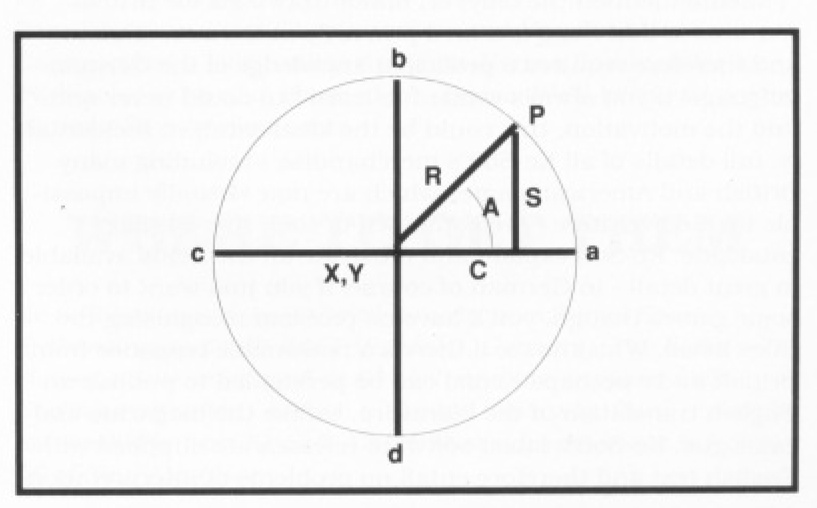
ADAPTING THE PROGRAM

We have already seen from the listing how the basic circle can be altered considerably just by multiplying COS(A) by a constant to elongate along the X axis. Some other changes you might like to try are:

- Multiply SIN(A) by a constant to elongate along the Y axis.
- Change the value of the constants in the ellipses to get a different amount of stretch or spread.
- Add constants to the Sin or Cos calculations for shading effects.
- Vary the value of the radius, axes co-ordinates with FOR NEXT loops to create concentric circles or a series of rings.
- Change the step value to alter the smoothness of the circumference.
- Draw arcs (parts of circles) by altering the FOR NEXT values. For instance, you would use "FOR A=0 TO 180" for a semi circle, where "A" is the angle.

The sine wave shape can be altered easily too. This one multiplies both W and SIN(W) by 3. If you multiply SIN(W) by a bigger number you will increase the amplitude (height of the crests and depth of the troughs) of the waves. Multiplying W by a different number will change the frequency (length) of a wave cycle. You could also change the number of cycles in the loop - each cycle is 360 degrees or 2PI long.

Overall, you could learn a lot about SIN, COS and so on just by experimenting with the simple program supplied here, so why not give it a try?



GOOD NEWS!

No, it's not a new bible class, Paul Rixon has discovered some brand new XL/XE software from Germany!

Before we all get too depressed over dwindling Atari support in the UK, we shouldn't overlook those enthusiasts overseas who are striving to keep the 8-bit micros alive. Kemal Ezcan is one such dedicated user who operates a company called Ke-Soft from Germany, publishing disk-based games and applications and selling all manner of established hardware and software products - from RAM enhancements to text adventures.

Ke-Soft was formed several years ago, primarily to fill a gap in the market for budget priced disk software. With a favourable response from German Atari owners, the company decided to launch a disk-based magazine called 'Zong'. The subsequent success of these activities prompted Ke-Soft's first full-priced game release (Drag - reviewed in Issue 52) and the transition of Zong into a small printed magazine. The magazine has since developed month by month into its present 'professional' format, with proper DTP layout and an accompanying program disk.

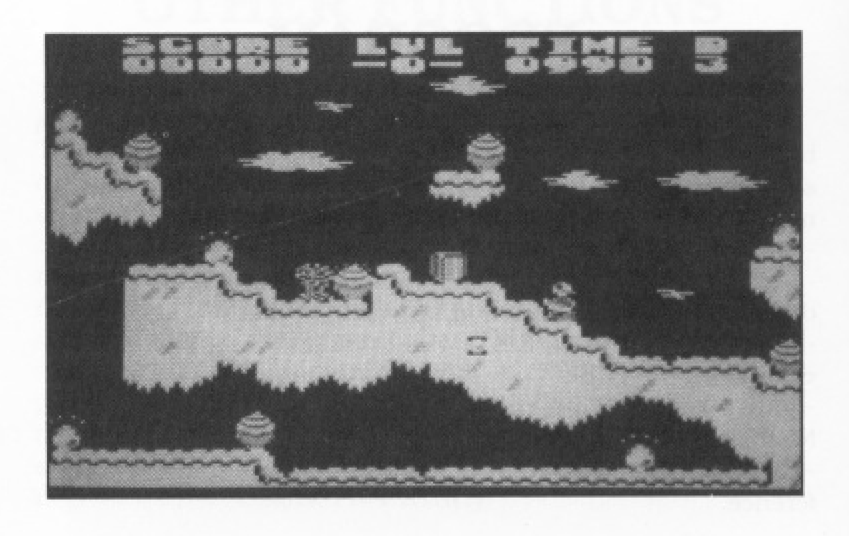
A browse through the May 1992 edition of Zong reveals 38 pages of information exclusively for Atari users. There are three pages of news and comments, detailed reviews of books, arcade games and adventures plus tips and cheats for popular titles. There are 'regular' features on topics such as PD software, adventure programming, graphics, assembler and sound effects. To round off there's a section of type-in program listings (mostly Turbo Basic) which are also provided ready-to-run on the supplementary disk. Here we find a programmer's text editor, graphics demos (illustrating points in the magazine article), a couple of games, an art utility and a musical interlude from none other than Richard Clayderman (ahem!). In the usual program disk tradition there are also two bonus files - a text adventure and a demo version of one of Ke-Soft's commercial products. Not content with their already high standards of presentation, Ke-Soft anticipate further improvements to Zong with the recent purchase of a high-spec DTP set-up.

SPRACHEN ZE ZONG?

I should mention the only, er, minor drawback for British Atarians is that Zong is aimed primarily at German readers and therefore requires a proficient knowledge of the German language! If you always wanted to learn but could never quite find the motivation, this could be the ideal catalyst. Incidentally, full details of all Ke-Soft's merchandise - including many British and American games which are now virtually impossible to find over here - are contained in their free 84 page catalogue. Ke-Soft explain and illustrate all the items available in great detail - in German of course! If you just want to order some games though, you'll have no problem recognising the titles listed. Who knows, if there's a reasonable response from British users perhaps Kemal can be persuaded to publish an English translation of the literature. Unlike the magazine and catalogue, Ke-Soft's latest software releases are supplied with English text and therefore entail no problems of interpretation.

DONALD

First up, ***DONALD*** is a platform game comprising ten screens in each of five alternative scenarios (yes, fifty screens in all). The player's task is to guide Donald (the Duck, naturally) in his quest to gather the famous golden eggs which are deposited at the hazardous locations. Setting off through the Amazon jungle Donald finds a secret passage and stumbles upon an Inka city. Deadly spiders, snakes and other prickly nasties are definitely best avoided. In downtown Transylvania Donald explores Dracula's castle and discovers bats, ghosts and other frightening adversaries. Fortunately there are some conveniently placed holy crosses here, whilst magical mirrors transport Donald to other parts of the castle. Once in the lost African mines Donald has to watch out for nails, spikes and falling rocks. Diamond rings keep him happy and certain temporary bridges uncover routes leading to valuable goodies. It suddenly becomes rather chilly with a trip through the

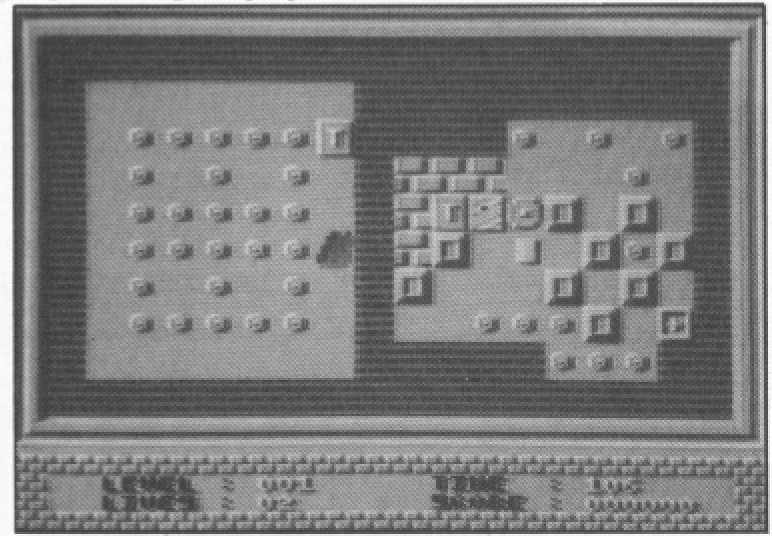


Himalayas but the cold is the least of Donald's worries as he climbs the treacherous peaks and descends into damp and dingy caverns. Snowstorms, crevasses and cold water await his arrival - and snowy surfaces aren't as solid as they look! Finally Donald lands on the Moon and foolishly enters an alien spaceship. Moon monsters and boiling moon-water are bad news, but the green cheese seems to go down well!

You can tackle the strange worlds in any order you choose, with the exception of the Moon which has to come last. Pixel-perfect jumping is required to negotiate the monsters and retrieve the missing eggs, and this may prove a little frustrating if your joystick diagonals are showing signs of fatigue! At least there are three settings of difficulty and provision for input via the Atari CX-85 numeric keypad, which you can purchase from Ke-Soft. The game kicks off with some cheerful music and the graphics are generally good, with plenty of variety over the five stages.

SAPER

Ke-Soft are well known for devising ingenious puzzles and **SAPER** is another worthwhile addition to the existing range. It begins with a superb sound and graphics demo - bouncing spheres, an original tune and a joystick-controllable scrolling instruction box. The printed notes are not over-helpful so you'd be wise to study the on-screen information before launching into the game proper.

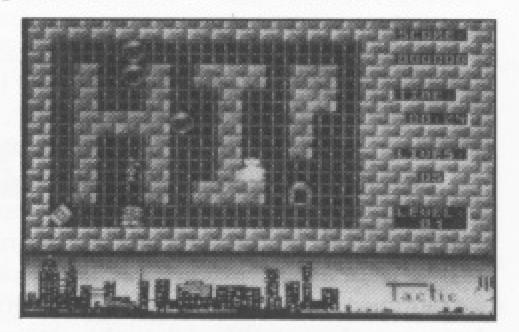


As ever, it all seems pretty simple. All you have to do is prime and explode the bombs on each level and ensure your little green character can make it back to the exit point. A bomb is activated by pushing the trigger when you're standing over it, so you have to make a rapid getaway before it explodes and breaks up the immediately surrounding area. Any adjacent bombs are also detonated, so it's essential that you predict the consequences before you act. As well as keeping clear of the boundary material there are one or two other considerations to bear in mind. Some blocks can be pushed around to your advantage, a teleporter sometimes provides the only means of escape and deadly bacteria will spread if you don't take preventative action. The addictive nature of the challenge will probably keep you occupied for hours!

The graphics, particularly the continuously scrolling (and periodically changing) backdrops, are highly commendable. The only thing missing is a password system, as it's presently rather annoying when you run out of lives and are forced to restart from the first level. Overall, I'll give Ke-Soft nine and three quarters out of ten for this one!

TAC-TIC

TACTIC is a conversion of a popular arcade puzzle theme which has previously appeared on all the major micros. On this occasion your joystick commands master criminal Bobby who, for some reason or another, has decided that he needs to get three valuable items together in a row. These items (pearls, diamonds etc.) can be pushed around the floor from behind but stop moving when they hit a wall or other object. While you ponder over a suitable route to enable the completion of this task, you've got to watch out for Boohooh the monster, who would love to see you in his monster stew. If you push an object into his path, you eliminate him for a short while but he soon re-appears from the Monster's den (well, he would wouldn't he!). There are various special features to keep you amused, such as anti-guard dynamite, bundles of extra points and bonus levels.



Once again the common characteristics of Ke-Soft's output are clearly evident. Excellent catchy music, cleverly engineered mazes and a well designed title screen with highscore facilities and on-screen instructions, give the general impression that the author has spared no effort to utilise the Atari's capabilities. As if in answer to my previous comments, there's even a password system with a code revealed after every tenth level. Tactic is another addictive game that doubles as a brilliant demonstration of the graphic and sonic power of the Atari.

OUTSTANDING SOFTWARE

And there we have it. By now you can be in no doubt that Ke-Soft are producing some really outstanding software. If, and only if, there is adequate interest from Atari owners, there's no reason why Ke-Soft shouldn't continue creating new games for the foreseeable future. All future releases are initially aimed at the German audience, but will duly be converted for English consumption - subject to demand. To whet your appetite, the next game due is a conversion of the unquestionably brilliant and unbelievably addictive hit Lemmings, called Brundles, and it sounds like it could be a winner! Good news for more serious users is that Ke-Soft are buying the copyright for XLent Software's Typesetter, First XLent Word Processor, Page Designer, Print Shop Interface and Megafont II+. Ke-Commander, a DOS utility similar to Norton Commander for PC machines, is also planned for release. We'll keep you posted on any other developments.

WHERE TO GET THEM

Ke-Soft games can be ordered directly from Kemal Ezcan, Frakenstrasse 24, W-6457 Maintal 4, Germany. The disks reviewed above are priced at £6 each and are supplied with English instructions and an unlimited warranty. Further details are available from Ke-Soft. Check their advertisement in Issue 56 of New Atari User.

FRUSTRATIONS!

Gordon F. Hooper dares to express what we all know is true!

The word "computer" has a synonym: "frustration". These two words can be used interchangeably, the same as "politician" and "liar".

I made this monumental discovery after I had been writing an article. I had written about 2,000 words when I got an inspiration for another story, and decided to start writing it immediately. After all, this was why I was using a word processor rather than a typewriter. I pushed the keys to delete the screen I was working on, and the computer quite correctly asked me if I was sure I wanted to delete this. Of course I was, or I wouldn't have asked the miserable machine to do it in the first place. It was exactly one nanosecond after I pushed the return key to delete my immortal words that I thought, "Did I save it to disk?" We all know the answer: "Of course not, you bumbling fool of a brain-rotted idiot!" Actually, the words I used were considerably more colourful than that, but this publication has standards which I unfortunately lack.

How many times has your computer locked up? This has the same effect as deleting files because you have to reboot to continue. And we all know that we haven't saved the file to disk as in the previous example, so we're back at square one again - all of our work has been sent to Alice, happily conversing with the Mad Hatter down in Wonderland.

This has been the story of my life with a computer - one of abject bafflement. I feel like I have all the intelligence of a hockey goalie who habitually plays without a helmet. He will eventually look down to find his brain laying on the ice like a drunken pancake. Unfortunately, I'm a writer, so it would be an especially sodden pancake!

I recently purchased an art/graphics program which the reviews said was supposed to be the ultimate in this line for $249.99. I eagerly went home, booted it up, and waited for the program to turn me into Michaelangelo. It turns out that the computer and program combined couldn't draw as much as a straight line. I was expected to read the docs, manipulate the computer and then draw something. The problem here lies in the fact that even with a pencil I can only draw stick figures. The computer in no way was going to turn me into an accomplished portraitist through some arcane process. It seems I would have had to practice for untold hours before I would have any prowess in art at all. I could have spent that time with a pencil for under a dollar, instead of the obscene amount I paid for the computer and program. I would have ended up in the same place but with the money in my pocket, instead of in the computer salesman's grubby little hands.

Another problem with computers is that every time you pay for a component, that action automatically triggers a price cut of at least seventy-five percent exactly one week after the salesman pries the hard-earned money out of your grasping hands. You have to embed in your mind that the fact an electronic item is offered for sale in stores means it is outdated. Actually, they are already manufacturing the next generation of the item before it even arrives in the store for sale. You are always one step behind the manufacturers no matter how quickly you buy the item when it's first offered for sale. Trying to play catch up with electronic items is as futile as trying to build a pig out of pork chops.

Even when you quit working on your computer and start playing games, the level of frustration doesn't diminish. Have you ever played a shoot-em-up arcade game and advanced to the highest level? I thought not. How about a text adventure game? The only conclusion I reach in those games is that I must have been brain dead all my life because after I've used up "Go north, south, east or west", I'm finished.

Another way to drive yourself to distraction is to try to isolate one component of your hardware and attempt to remove it, whether it be for repair or to demonstrate at a user's group meeting. The rat's nest of wires behind your desk which is required to operate the computer and its' peripherals is enough to send you babbling to the local establishment which serves to contain those individuals whose sense of reality tends to require extensive downsizing of the head.

Modems have the capability of setting up their own particular forms of Hell. Terminal programs have various items that you have to set for each individual BBS that you wish to use. Things like parity, translation, duplex and baud rate all must coincide or you might as well switch to collecting dinner plates as a hobby for all the enjoyment you'll get out of BBS's. You'll soon learn not to enter into "chat" mode with the Sysop's of long distance boards or you'll get phone bills that would make the Emir of an oil-rich Arab state gulp a couple of times. A neophyte on BBS's should also be warned about leaving nasty messages to other people on message bases while hiding behind a pseudo. Sooner or later the sysop of the board will tell the other people who you are, and then you will be looking over your shoulder every time you go outdoors.

Looking at the overall picture, computers are marvellous machines which make life much easier in many ways. People who purchase one and expect everything to be a bed of roses, however, tend to be those who really believe that the cheque is in the mail and Dorothy really met the 'ol Oz.

contact ... contact ... contact ... contact

FOR SALE

XL SYSTEM: 800XL, 1050 Drive, Datacorder, Joystick, Lots of Tapes and Disks including Transdisk. Roms (Pacman & Galaxian) plus Dos 2.5 disk & manual plus mags, all for £120 o.n.o. including delivery. Phone Michael on 0603 36837

130XE: 130XE with XC12 tape recorder and games all very good condition and boxed, £70 the lot. Phone 0639 639040

COMMS: Microlink Pace Linnet Modem 1200 Baud, v21/V22/V23 with K-Comms 2 S/Ware for the ST. Hardly used, complete with leads etc. £60 Ring John 0925 413633

XE SYSTEM: 130XE, 1050 Drive, Joysticks, Trackball, Touch Tablet all boxed with manuals, leads etc. Choice of Printer Epson LQ800 24 pin or Star LC10 (inc. Parallel Interface). Plus lots of disks and cartridges, games and serious software, books & mags. £250 (no splits). Phone 0635 863542

XE SYSTEM: 130XE, 1050 Disk Drive (US Doubler), 850 Interface (with Centronics printer lead), Mac65 (with Toolkit), Action! (with Toolkit) plus others and games all original boxes and manuals, £200 ono. Phone Stephen on 0305 260375

XE GAMES SYSTEM: Game console with 64k memory, Keyboard, Light Gun, Joystick and XC12 recorder plus 22 games. Buyer collects. £150. Phone 041 631 2082

XL SYSTEM: 256k Rev C 800XL £45 inc.; 810 £50 inc.; 410 £25 inc.; 3 joysticks/ 7disks/ 6roms/ 8cass £35 inc.; 100 disks (boxed) of PD and type in etc. £55 inc.; 1050 Rev 7 Happy £90 inc.; Plus lots more bits. Phone Mark on 0752 344650

XL SYSTEM: 800XL, 1050 with Doubler, 1010 recorder, Epson RX100 printer with Centronics interface, Parrot II sound digitiser, with games and business software worth over £300 alone. All this for £250 ono. Phone 0425 612119

MUSIC PACKAGE: Page 6 Midimaster, music data disks, Casio CZ1 Synth Multitimbral with all manuals. Also plug in Rom extra voices programmed within stereo amplifier and speakers. All good condition Bargain £300 prefer buyer collects but negotiable. Phone 0293 511708 before 9pm

POWER PACK: Suitable for Atari peripherals that use power from mains £7.00. Plus for SPARES 1020 Plotter, disassembled and print head and wire damaged £9.50. Phone Anthony on 061 248 7893 after 4pm

LYNX 2: Plus power pack, carry case, Midi connector and 12 games. Excellent condition boxed as new. Still has 6 months guarantee left to run. May split. £250 ono Phone 0602 720597

XE SYSTEM: 130 XE, 1050 Drive, 1029 Printer, Transformers, leads, joysticks and manuals. Mini office 2 plus lots of disks, games and blanks, £195. Also black desk, 3 shelves and paper tray, £30. Phone 0223 873076

65XE: Plus XC12 recorder, Cruiser joystick and 54 games. Buyer must collect. £130 ono. Phone 046836 250 after 4pm

800XL: Plus 1050 drive with Happy, Printer (1027 or 1029) plus software £160. 800XL, 1010 recorder with Rambit and software £45 Buyer collects or pays p & p. Phone 0384 379575

XL SYSTEM: 800XL, Data recorder, 1027 LQ Printer, joystick and over £100 of software. £150 ono. Phones 0209 213676

XL SYSTEM: 800XL new and unused (boxed) £70. 1029 Printer boxed £80. Various magazines inc. Antic (approx. 100) £20. Plus printer paper and disks £15. Buyer to collect or pay postage. Phone 047483 2404

XE SYSTEM: Including an XC12 recorder, 33 games on tape and some Roms, light phazar and detachable keyboard. £200 ono. Phone Kriss on 0685 813022

XL/ST: 1029 Printer £70. Casio C22305 Midi keyboard £120. Midimaster £15. David Davies, Pen-Tyddyn, Capel Coch, LLangefni, Anglesey LL77 7UR

WANTED

MANUAL: Instruction manual for 65XE also Disk Drive wanted in good condition. Phone Steve 0302 700424

VARIOUS: Page 6 issues 18 and 19, Master Memory Map, Your Atari Computer, Mapping the Atari, Atari Roots, Tech Ref. Notes, Warpspeed Dos XL, Dos XE plus other unusual/rare bits. Reasonable prices paid. Dave. W., 34 Hoggs Lane, Northfield, Birmingham B31 1SB

GAMES: Winter Events and Day at the Races, or any other Horse racing game on cassette. Good price and postage paid. A. Surrey, 39 Luton Road, Faversham, Kent ME13 8HQ

DISK DRIVE: 1050 Drive with Happy or US Doubler. Must be in working order with leads & manuals. £45 without upgrade or £55 with. James Haworth, 86 Ashtree Road, Oadby, Leicester LE2 5TD

DISK DRIVE: 1050 wanted in good working order with leads, power supply etc. J Cooke, 32 Moor Park Road, Hereford HR4 0RR

DISK DRIVE: XF551 or 1050 wanted, must be in Good Condition, very good price paid depending on condition. S Phillips, 1 Norrisville Road, Montpelier, Bristol BS6 5NB

CHESS: Colossus Chess 4 wanted, must be disk version. Reasonable price paid. Contact Page 6 Publishing usual address

LANGUAGES: English/Spanish anything from beginners to GCE standard on the XL/XE or ST. Can anyone help? C Smith, 93 Preachers Lane, St. Ebbe's, Oxford OX1 1RT

COMMS SOFTWARE: Wanted to review in Atari Elite, documentation also wanted, all copies returned. Phone 0721 20863 ask for Rod

PENPALS/HELP

REVIEWERS: Writers, programmers, artists and contributors from the UK and abroad for NEW user group magazine called Atari Elite covers 8-bit, ST and Portfolio. Contact us if you can help. Editorial Office, Atari Elite Magazine, 129 Ladybridge Road, Cheadle Hulme, Cheshire SK8 5PL

RAMBIT-TURBO: Cassette user group dedicated to Rambit-Turbo. For information call Rick on 0775 89202 or Dave on 0654 711331

NEW MAGAZINE: Atari Elite to cover all aspects of Atari computing for novice to advanced users. Send reply paid envelope for more info to Admin. Office, Atari Elite, 14 Drovers Way, Peebles, EH45 9BN

8-BIT PEN PALS: 19 year old 8-bitter wants contact with any other user. Write to Derek, 1 Bidwell Hill, Houghton Regis, Dunstable, Beds LU5 5DR

HELP: We have a 65XE and an XMM801 printer, Printshop and the Graphics disks. Has anyone got a Translator disk so we can use this properly? G Cook, 10 Ramleh Road, Reservoir, Victoria 3073, Australia

FOOTBALL: Has anyone any 8-bit disks for either Football Pools or Horse Racing or any simulations. Write to M O'Meara, 19 Queen Elizabeth Dr, Corringham, Essex SS17 7TH

PENPALS: I would like to hear from any 8-bit users. I own a 800XL, 1050 and 1020. All letters answered, Adrian Groves, 32 Ingmire Road, Eastville, Bristol BS5 6XD

PENPALS: Long time Atarian recently purchased a disk drive and would now like to get in touch with other users. Derek Burwin, 266 Liverpool St, Salford, M5 4AD

CONTACT is FREE of charge and may be used by any genuine Atari enthusiast for contacting other owners. Any notice may be included except those offering software only for sale or exchange or those offering items for sale commercially. The Editor reserves the right to omit or edit any notice received at his discresion. If space is tight, notices may be shortened and addresses may be omitted with only telephone numbers being published.

Send your CONTACT notice to CONTACT, PAGE 6, P.O. Box 54, Stafford, ST16 1DR. Please write your notice on a separate sheet of paper, not as part of a letter.

FOR SALE ... WANTED ... PEN PALS ... ADVICE ... HELP ...

COME AND SEE US!

It's time to begin thinking about the Alternative Micro Show again, even though it's still far away! As a preliminary we shall be at the All Formats Fair at the Motorcycle Museum in Birmingham where we may well have a goodly number of odds and ends to clear following our move. Who knows what will turn up in all those dark corners! We hope to see you at the following events

ALL FORMATS FAIR

National Motorcycle Museum - Birmingham

(Off Junction 6 on the M42)

SATURDAY SEPTEMBER 5th

10am - 4pm

See us in Hall C Stands 34/5

Only notification - mark your diaries now!

ALTERNATIVE MICRO SHOW

Bingley Hall Stafford

SATURDAY NOVEMBER 14th

10am - 4pm

LOTS OF USUAL 8-BIT AND ST SUPPORT

See further advertisement next issue

WE LOOK FORWARD TO SEEEING YOU THERE!

THE XL/XE REGISTER

Many Atari owners have found it difficult to find copies of New Atari User due to several newsagents being reluctant to stock the magazine now that it is on 'firm sale'. A lot of owners believe their newsagent when they are told that we are no longer publishing. To combat these problems we are setting up a register of readers who do not subscribe to the magazine so that we can, once in while, mail them with details of our current activities and perhaps special offers from the world of Atari. If you do not subscribe, please take time to send us your name and address for inclusion on the register.

Please note my interest in the Atari XL/XE. I do not currently subscribe to New Atari User.

Name ....

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You may photocopy this coupon or simply copy the wording onto your own notepaper. Alternatively just telephone and ask to be included on the register. There is no obligation for you to purchase anything, we simply wish to note your interest so that we can keep you informed from time to time of what is happening with New Atari User and the Atari world in general

IF YOU STILL WANT SUPPORT FOR YOUR ATARI THEN IT IS IN YOUR OWN INTEREST TO LET US KNOW - IF YOU DON'T REGISTER THEN SUPPORT FOR YOUR MACHINE WILL GRADUALLY FADE AWAY

TRANSDISK IV

FILE MANAGEMENT, SOME PROBLEMS AND SOLUTIONS

TRANSDISK IV is without doubt THE tape to disk utility. With a little effort and a lot of patience you can have your favourite progs transferred from tape to disk - great! But, sooner or later you may decide that you want to rearrange the games you have save and the time comes for a little file manipulating. This is not too much of a problem as long as you are still using the same Atari set-up. You just use DOS 2.0 as instructed in the manual (although the manual I received way back in 1987 was a little vague on the subject). Don't use DOS 2.5 (I'll explain why later).

But what if you have changed your system since you last initialized your Transdisk disks or your 130XE has up and died on you and you have to revert to your trusty old 800XL? You run into problems that's what!

So, what follows is a rough guide to the pitfalls of TRANSDISK IV. The information will be of most use to newcomers to the wonderful world of disk drives and things.

THE INITIAL PROBLEM

TRANSDISK IV automatically *knows* which kind of computer and which kind of drive you are using and will format your disk accordingly i.e. if you have an old 810 disk drive it will format in single density. If you have a standard 1050 disk drive, it will format in enhanced density and if you have a modified disk drive capable of double density, then it will format in double density. You have no choice in the matter and therein lies the root of the problem. Incompatibility between systems develops. This is a great pity, for if a choice had been available then you could choose which density and which menu you wanted in order to suit a particular system (your kid's, dad's, nephew's etc.).

If you are encountering problems, the following information may be of some use. I'll just ramble on with a few do's and don'ts and you can pick-out the ones relevant to your system or systems.

First of all TRANSDISK IV files will ONLY run on disks initialized with TRANSDISK IV i.e. a TRANSDISK IV menu disk. You MUST initialize a disk and write a menu using TRANSDISK IV. It is not possible to format a disk using DOS and transfer any of the MENU.SYS files using DOS.

A TRANSDISK IV file is NOT a normal Binary file - it is a special binary file peculiar to Transdisk IV. Therefore it won't run on normal binary load menus or from DOS option L.

The next thing to remember to keep you on the rails, is to match menus when transferring files i.e. if your source files are on an XTMENU.SYS disk then transfer them to an XTMENU.SYS (not an XLMENU.SYS) disk and remember to use the .OBJ extender.

As far as I know, the 130XE menus do not run on 800XLs, also,large files transferred from tape to disk on a 130XE may not run on an 800XL - Rockford is one that I know of. So if all your disks were done to suit your 130XE and your 130XE dies, then you will have to rake out your old 800XL (or lay your hands on one) and Initialize disks to suit the 800XL, then transfer your files (more about file transfer later).

DISK DRIVES AND DISK SPACE

810 disk drive owners can only read disks that were initialized on an 810 disk drive (the 810 can't read a 1050 or double density initialized disk). Standard 1050 disk drive owners can read disks that have been initialized in single or enhanced (1050) density but cannot read double density disks.

A little anomaly with the 1050 initialization exists, as described below:-

When TRANSDISK IV formats a disk in 1050 (enhanced) density it writes the MENU.SYS file to sectors 920-1040. When you transfer tapes to disk, transdisk will use-up all the available disk space of an enhanced density disk i.e. from sector 4 to sector 919, excluding sectors 360-368 (directory). I think this is done with a custom O.S. (operating system) and therefore a newly formatted disk shows 907 free sectors. When you transfer files via DOS 2.0 sectors 721 onward become unavailable (a single density disk has a maximum of 720 sectors). The reason for not using DOS 2.5 is that DOS 2.5 uses sector 1024 as part of the VTOC table and if you transfer files using DOS 2.5, sector 1024 is over-written, thus destroying one sector of the MENU.SYS file. Rather confusing isn't it?

A LITTLE DISK INFO

The 800XL XT and XLMENU.SYS files occupy the following sectors (I don't know about the 130XE I haven't got one)

DENSITY	START SECTOR	END SECTOR	NO OF SECS	FREE
SINGLE	4	123	120	591
ENHANCED	920	1040	120	707
DOUBLE	4	63	64	647

IN CONCLUSION

If you are using an 810 or a standard 1050 disk drive, use DOS 2.0 to transfer files. If you are using a double density disk drive, you can use SpartaDos or Mydos 4.0. There may be other DOS's that will work, but avoid any that can handle enhanced density as they will surely destroy the information held in sector 1024 of an enhanced density disk (namely part of the MENU.SYS file.

The above information was found-out the hard way, over years of using TRANSDISK IV but I would have no hesitation in recommending TRANSDISK IV to anyone who needs such a prog.

Well it's time to go. I hope that someone out there in Atariland finds something of interest in this article. A quick Hi to John Bunting, who twisted my arm to write this article.

If anyone has any comments, I can be reached at:-

BILL JACKSON, 68, MARTIN STREET,
BUCKHAVEN, LEVEN, FIFE, SCOTLAND KY8 1EP

DOUBLE CHEESE please, NOLAN

One of the good things about working in the computer industry is the amount of free literature that arrives on your desk. The bad thing is that, once you have spent a lot of time to read through it all, you find that there was little, if anything, of interest. Once in a while though a little gem of an article appears.

One of these was an article by Tracey Snell concerning an interview with Nolan Bushnell. Nolan who? Surely you cannot forget the guy who started all this? He was the person who invented the first video arcade computer game in 1972. We know it as 'Ping' but the Americans called it 'Pong'. He went on to set up ATARI and sold 150,000 copies of the coin operated game and almost two million copies of a home TV version in the first year. All this long before Space Invaders turned us into computer gaming addicts! Four years later ATARI was sold for $30 million (£16.6 million).

So, whatever happened to Nolan? He retired from business for a year but still had the entrepreneurial urge to start again. This he did with 'Chuck E Cheese', a pizza restaurant. Seven years and 280 restaurants later (each with an annual turnover of $1 million) Nolan was getting tired of looking at business accounts all day. In 1984 he sold the chain to the US Brock Hotel Group for an undisclosed sum.

In 1981 he founded Catalyst Technologies. Since ATARI he has founded 16 companies and sold shares in all but 5. His one regret was the mistake of selling ATARI. He believes that ATARI would eventually have become a stronger competitor than Apple to IBM if the company had transferred its games technology to the business PC. He is at present setting up a company called Octus to make networking PC's easier.

One last point. Ping was not his first computer game but the second he invented. The first was a game called Computer Space, a game with flying saucers and rocket ships. It sold only 125 copies even though Bushnell states, "It was a better game than Pong, but it was marketed badly". How much would one fetch on Antiques Roadshow today?

Did you know that the guy who invented the Atari became a multi-millionaire with a chain of pizza restaurants but regrets ever selling Atari?

As I write this article the last one is still in the hands of the Editor so I have no answers to the questions I asked. Maybe next time. I would be very interested in a survey of readers, listing such things as how well they can program, are the tutorials ever used, what facets of programming would be interesting, etc. I think it would be nice if a survey was carried out and most of an issue used to look at what our ATARI's are used for. Surely we could do without a games listing, just for once, to find out what our fellow ATARI owners are up to, what they think and what they would like? I believe it would be interesting to note the changing trends, if any, over the past few years. Only one thing would stop this being a success, YOU! Would you take the time, would you make the effort not only to complete the survey, but also to send it in to the magazine? Why not? Your opinion is as important as anyone's, isn't it?

One of the onerous tasks about writing a column of this nature is to find out something to write about. I try to gauge the article to be 1000 words. Believe me, this can really be a struggle. It can be very easy to write an article of around a couple of hundred words. Anybody could do that; even you, the reader. Surely you must have some interesting titbit that could be passed on to other readers? A bit of gossip, history, a small program, news or anything else of interest to your fellow ATARI owners. Really, it is not all that difficult, and think how interesting a page of such articles could be.

Why do I mention this? Well, as I told you in a previous article, I produce a local magazine for CAMRA members. It is one thing to write articles as part of a group, such as ATARI USER, but it is harder to to be the Editor of a publication and write all the articles without knowing how the readers feel about those articles. I am always asking for feedback either as articles or as comments but receive little from my readers. Editors work long, hard hours to produce their magazine and a little help in the way of articles is really appreciated.

Well. that's another one stored on the disk, but what to write about for next issue? Till then, enjoy your computing

Mark Hutchinson

THE ACCESSORY SHOP
ISSUE 57

NEW CLASSICS

This issue we are proud to be able to offer some of the all time classics for the Atari, many of which have been unavailable for some time. If you are a new owner you will be astounded by the quality of some of these games and if you you are an old hand your collection is not complete without these games. Either way, there has never before been the opportunity to sample the very best of Atari classic software at such low prices

STILL AVAILABLE

TWO POPULAR ROMS BACK IN STOCK
RIVER RAID - ONLY £3.95
KABOOM - ONLY £2.95

See previous issues for full descriptions of these great games

NEW!

TRIVIAL PURSUIT



The classic board game translated to the Atari with added question power. Now you can answer questions presented with music and graphics as well as straight text. An ideal family game or one you can play on your own. Over 3,000 questions and all the mechanics of the game taken care of by the computer. Trivia has never been so much fun and has never been available before at this price!

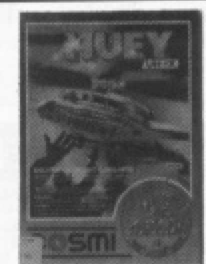
Originally £14.95

DISK ONLY

OUR PRICE £4.95

SUPER HUEY

NEW!



A real helicopter simulation with the added excitement of rescue and combat missions to undertake. Learn the techniques of flying and familiarise yourself with the instruments then take on the challenge of rescuing stranded military personnel, fly over and map uncharted territory or use rockets and machine guns to defend a secret desert installation from attack by hostile forces. One of the few helicopter sims for the Atari.

OUR PRICE £4.95

DISK ONLY

NEW!

CRUMBLE'S CRISIS



Captain Crumble was one of the characters that found a unique place in the hearts of many Atari addicts. This truly English creation will warm your heart too as he rushes around trying to round up the Fuzzies who have escaped from the Inter-galactic zoo. Can you find and snare the Fuzzies throughout all five levels of this game? Be warned it's not easy!

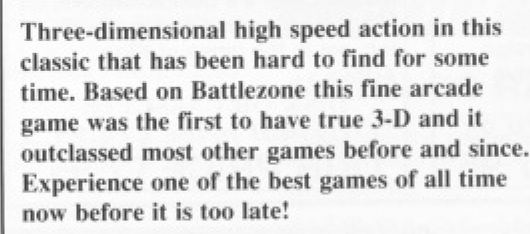
Originally £9.95

DISK ONLY

OUR PRICE £2.95

ENCOUNTER

NEW!



Three-dimensional high speed action in this classic that has been hard to find for some time. Based on Battlezone this fine arcade game was the first to have true 3-D and it outclassed most other games before and since. Experience one of the best games of all time now before it is too late!

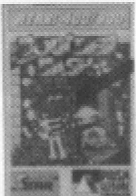


OUR PRICE £2.95

CASSETTE ONLY

CLASSIC CASSETTES

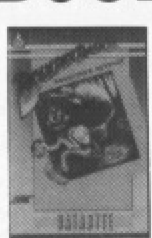
BOULDERDASH



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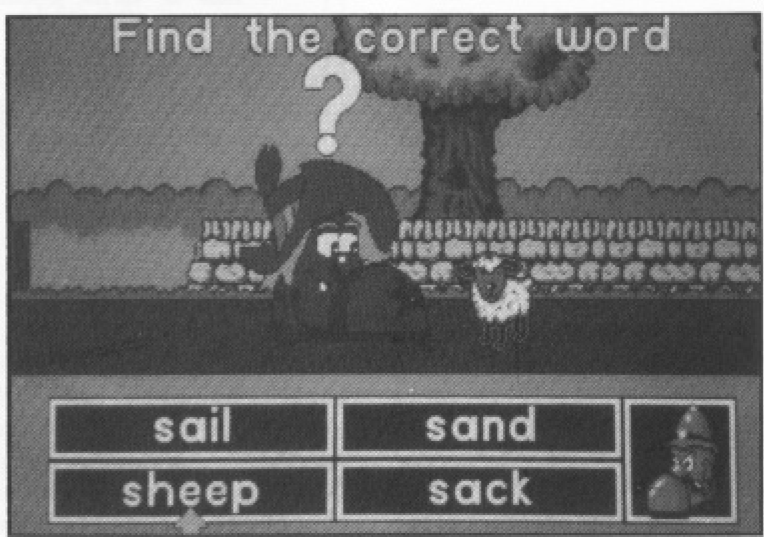
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SHOE PEOPLE

What's this? Educational software from Gremlin Graphics? Yes, Shoe People is the first of a planned series of releases on Gremlin's "First Class" label. It's aimed at children in the 4-6 years old age group and designed to help achieve competence in a wide range of basic skills. The program is based on the Shoe People, a TV cartoon series popular with young children. Its characters are different kinds of shoes, and their "personality" is determined by shoe type. For example, Trampy is a scruffy looking character who looks like a tramp's shoe.

The package includes two single sided disks; a badge showing one of the featured characters; four disk labels for any workdisks you use; a Shoe People story book; and a 28 page instruction manual. The program consists of six separate "activities", each featuring the Shoe People.



THE GAMES

TRAMPY VISITS HIS FRIENDS - choose which of eight friends (representing eight difficulty levels) you'd like Trampy to visit. On the way he has to identify various objects that have fallen off a lorry. The easiest level involves matching the objects with ones from a selection presented on screen, and progresses upwards through word matching, to spelling out the object's name. Answer correctly and Trampy finds his friend at home. Too many incorrect answers cause the friend to be out when Trampy arrives.

SGT MAJOR SORTS IT OUT - Baby Bootee has knocked everything off the shelves in Sgt Major's store cupboard. Help him return the items to their correct shelves, based on their shape, colour, or pattern. Correct answers raise a flag to the top of the flagpole.

Title:	**SHOE PEOPLE**
Publisher:	**Gremlin Graphics**
Price:	**£25.99**
Reviewer:	**John S Davison**

THE GREAT ALPHABET ROBBERY - help PC Boot stop Sneaker escaping with the letters of the alphabet, by solving anagrams of words already encountered in "Trampy Visits His Friends". Correct answers take Sneaker closer to PC Boot's police station, while incorrect ones move him closer to the bridge over which he can escape.

WELLINGTON GOES TO THE PARK - help Wellington get really muddy by correctly answering questions on numbers at four difficulty levels. It involves counting and adding, using blocks, spots on dice, or numerals. Problems appear on one side of a see-saw causing it to tilt. Correct answers cause the see-saw to balance and Wellington to jump around in a very muddy puddle. Five correct answers see Wellington completely covered in mud, but one wrong answer causes a raincloud to appear and rinse him completely clean again!

CHARLIE'S BIG DAY - help Charlie the Clown to remember his tricks at three difficulty levels. It's based on the old "Simon" memory game - at the easy level you have to remember an ever increasing sequence of tricks performed by Charlie, the idea being to build up as large a sequence as possible. At medium level the tricks are randomly generated on each turn. At the hardest level Charlie performs a set sequence of tricks twice, but stops partway through the third run through. You then have to indicate what comes next. Tricks are periodically added to the sequence to make it harder still.

MARGOT'S MAGIC COLOURING BOOK - a simple art program allowing you to draw your own pictures or colour in pictures of the Shoe People provided by the program. Pictures may be saved to a workdisk or printed out, the latter only as line drawings as colour fills are ignored. However, this does mean you can then colour them in with paints or crayons on paper - an extra bonus activity!

PRESENTATION

Presentation of Shoe People is generally very good. The graphics are bold and colourful, and the animation is neatly done. The sound seems to be internally chip generated, with no obvious sign of sampled sounds. It's competently handled, although there are several strangely silent gaps in places. A few extra sound effects would have improved this.

And now for the niggles. To start with the loading instructions are incorrect - the program will never load if you follow them! Also, you're not told that each disk has to be booted separately. More seriously, I thought the program handles wrong answers in a rather intimidating manner - young children just don't like seeing big crosses against their work, especially if anyone's watching. And although you're shown the correct answer, you're not usually given a second attempt at the problem. I didn't really like program's use of both upper and lower case letters either, as many young children could be confused by this. The most serious problem I found was that in Alphabet Robbery you can't correct answers you've mis-keyed - the backspace key isn't supported - a bad idea in a program designed for young children.

CONCLUSION

In summary, I was a little disappointed with Shoe People. The idea and presentation are excellent, and children will love the graphics, but it's let down by a few niggling problems. If the authors had taken a little more care it really could have been a "First Class" program.

MAKING MUSIC WITH YOUR ATARI



BAND-IN-A-BOX REVISITED

John S Davison's regular guide

About eighteen months ago (in Issue 48) I wrote about a wonderful new music program for the ST called Band-In-A-Box. Since then the program has enjoyed great success selling well over 30,000 copies, helped no doubt by author Peter Gannon's policy of continuous product development. The program has now reached Version 5, so it's worth taking another look to see what's been added since Version 3, the subject of my previous article.

For those unfamiliar with Band-In-A-Box let me briefly explain what it does. Its purpose is to rapidly produce a professional quality "backing track" accompaniment for any song. In concept it's rather like the auto-accompaniment features found on certain Yamaha, Casio, and other makes of home keyboard, but here the functions are implemented in software running on your ST and work via a MIDI attached synthesiser.

Unlike home keyboard accompaniment features Band-In-A-Box doesn't work in real-time - you have to set up a song in a spreadsheet-like table first. You tell it which chords to play (using simple chord symbols such as Bb, G7, etc. rather than music notation); where the chord changes occur; the musical style to use (Rock, Ballad, Boogie, Country, etc.); plus details about the structure of the song such as how many verses, where the chorus starts, and so on. This is much quicker to do than explain as you can enter a song and be playing it back in just a couple of minutes. You can then play or sing the main melody line along with it to complete the performance, or even export the accompaniment as a MIDI Standard File to other music programs for further enhancement. If you don't like the style you just select a different one, and the program quickly regenerates a new accompaniment using it. You have to see and hear it in action to appreciate how well it works - it seems almost magical!

You can purchase V5 either as a complete package for £69, or as an upgrade from previous versions for around £49 (from Zone Distribution, Unit 6/70, Eurolink Business Centre, 49 Effra Road, London SW9 1BZ, phone 071-738-5444). This buys you four disks and a new manual. Included are a program disk; two disks full of accompaniment "styles"; and a "MIDI fakebook" disk holding about one hundred ready made songs. It requires a 1MB ST(E) with colour or monochrome monitor, and of course you need a MIDI synthesiser to play the sounds. This should be capable of multitimbral operation (i.e. can play different instrumental sounds simultaneously) with at least 12 note polyphony (can play 12 notes simultaneously) to fully exploit V5's new features.

Band-In-A-Box V3 produced three part arrangements for piano, bass, and drums, in 24 different styles, but Version 5's capabilities now go much further than this. In fact, it addresses virtually all of the (mild) criticisms I raised in my previous article.

FIVE PARTS

The first big difference over earlier versions is that it can now generate up to FIVE instrumental parts in the accompaniment - drums, bass, piano, guitar, and strings. There's also provision for a sixth part, horns, to be fully implemented in a later release.

At first I was a little disappointed with the sound of the four and five part styles, as they didn't seem to add that much to the music when compared with earlier three part equivalents. A little experimentation to find the best guitar and string patches on my Yamaha YS-200 synth soon fixed this though, and in no time I had a guitar part providing a crisp rhythmical contrast to the piano and the strings supplying a soft background pad sound. It really did sound rather nice.

In future the problem outlined above may be helped by new feature number two, which involves General MIDI. No, this isn't the commander of the military wing of Yamaha, but a recent enhancement to the MIDI specification. I'll be covering this topic in a future article, so I'll just describe it briefly here.

General MIDI is designed to eliminate the anarchy that currently exists in the area of synthesiser patch numbers and the sounds they represent. For instance, patch 23 on Manufacturer A's synth might be a piano sound, but on Manufacturer B's instrument it's likely to be something totally different like electric bagpipes, a Bosnian nose-harp, or something equally peculiar (and unusable)! Sequencer songs set up for the first synth would obviously sound terrible if played back on the second one. Fixing the problem involves manually changing the sequencer file to use the correct patch numbers for the second synth - a tedious exercise.

General MIDI eliminates this hassle by defining a standard set of 128 synth sounds and patch numbers to invoke them. These will be included on all GM compatible synths in future, and any sequencer file set up for GM may then be played back



on any GM compatible synth and produce the correct sounds. It sounds obvious, but it's taken TEN YEARS to get to this standard!

PATCH MAP

Band-In-A-Box V5 provides GM support. The styles contain built-in patch changes using GM patch numbers, so if you use a GM compatible synth you should get acceptable sounds straight away. If yours isn't compatible then you can use Band-In-A-Box's new Patch Map facility. With this you can set up a table showing which patch to use on your synth for each of the GM patch numbers. It still takes some experimentation to find the best sounds, but once set up you can save the map on disk and reload it whenever required. If you want to use a different non-GM compatible synth you simply repeat the procedure to create an appropriate map.

For further flexibility you can also set your ten favourite patches for each part in an arrangement and switch between them on demand during playback. This lets you experiment with the texture of an arrangement as it plays. It's even possible to set up favourite "combos" - sets of patches which can be changed for all instruments simultaneously. For instance you could set up a jazz combo, rock combo, etc.

Major change number three (which actually was introduced in V4 and improved further in V5) is that you're no longer limited to the accompaniment styles built into the program. It now has a function called StyleMaker, which allows you to

```
F6 Guitar  : 27 Jazz Electric Guitar »                        BPDGHSMT

  As Time Goes By
  SHUFROK2.STY          Key Eb      Tempo 80      (1-32)*3

 1 Fm7     Bb9         2 Gm7b5C7  Fm7 Bb9    3 Eb6      Fm7       4 F#dim   Gm7
 5 Cm7     F9          6 Fm7      Fm7 Bb9    7 EbMAJ7   AbMAJ9    8 Gm7b5   C7
 9 Fm7     Bb9        10 Gm7 C7   Fm7 Bb9   11 Eb6      Fm7      12 F#dim   Gm7
13 Cm7     F9         14 Fm7      Fm7 Bb9   15 Eb69     Abm7Db9  16 Eb6     Bbm7Eb9
17 Ab6                18 Gm7b5    C7        19 Fm7               20 F#dim
21 Cm7     CmMAJ7     22 Cm7      F9        23 Fm7      C7       24 Fm7     Bb9 C7
25 Fm7     Bb9        26 Gm7b5C7  Fm7 Bb9   27 Eb6      Fm7      28 F#dim   Gm7
29 Cm7     F9  F#di   30 Gm7      C7b9      31 Fm7      Bb9      32 Eb69    C7b9
33 Eb69               34                    35                   36
37                    38                    39                   40
41                    42                    43                   44
45                    46                    47                   48
49                    50                    51                   52
53                    54                    55                   56
57                    58                    59                   60
61                    62                    63                   64
```

```
                                                                     1
                   Timebase: 12
    Beat #->1               2                 3                 4
18 open shakr.   .   .   .    .   .   .   .    .   .   .   .    .   .   .   .
17 clsd shakr.   .   .   .    .   .   .   .    .   .   .   .    .   .   .   .
16 claps     .   .   .   .    .   .   .   .    .   .   .   .    .   .   .   .
15 tambourine90  60  90  .    90  60  90  .    60  90  60  .    90  60  90  .
14 timbale   .   .   .   .    .   .   .   .    .   .   .   .    .   .   .   .
13 high conga.   .   .   .    .   .   .   .    .   .   .   .    .   .   .   .
12 low conga .   .   .   .    .   .   .   .    .   .   .   .    .   .   .   .
11 high tom  .   .   .   .    .   .   .   .    .   .   .   .    .   .   .   .
10 mid tom   .   .   .   .    .   .   .   .    .   .   .   .    .   .   .   .
 9 low tom   .   .   .   .    .   .   .   .    .   .   .   .    .   .   .   .
 8 crash     .   .   .   .    .   .   .   .    .   .   .   .    .   .   .   .
 7 ride      .   .   .   .    .   .   .   .    .   .   .   .    .   .   .   .
 6 cow bell  .   .   .   .    .   .   .   .    .   .   .   .    .   .   .   .
 5 rim shot  .   .   .   .    .   .   .   .    .   .   .   .    .   .   .   .
 4 open hh   .   .   .   .    .   .   .   .    .   .   .   .    .   .   .   .
 3 closed hh 100 60  109 .    .   86  100 .    104 70  107 .    .   80  100 .
 2 snare     .   .   .   .    115 .   .   .    .   .   .   .    115 .   .   .
 1 kick      100 .   100 .    .   .   .   .    100 .   100 .    .   .   .   .
        Alternate     Play Percent:  .        Note Num: .       Velocity: .
Velocity HotKeys->  Z X C V B N M , . /
Type velocities or use arrow keys to move  (F5)Alt-notes (F4)Play  (F10)Exit
```

Band-In-A-Box's main editing screen and the Drum Editor

define your own styles - and they can be as simple or as complex as you wish. For instance, a style can include up to 600 user defined patterns (sections of music making up a style), each of which can be triggered by different circumstances, e.g. they might be assigned to play only on certain chord types, or played only in even numbered bars, or odd numbered bars.

Creating a new style can be quite complicated, but you can start with something simple and work your way up. StyleMaker's screens aren't very graphical, but using them isn't as difficult as it looks. Drum patterns are entered in step-time using a grid based drum rhythm editor, but patterns for other instruments have to be played in real-time from a MIDI keyboard. You only use one chord for this - the chord of C7 - although you can include any note you wish by using the riff based option if required. Band-In-A-Box automatically transposes these to work with any other chord requested in a song.

100 STYLES

The style disks include the original set of styles; twenty five new three instrument styles (originally released separately as an accessory disk, I believe); twenty five new four and five instrument styles; and about thirty reworked versions of the original styles using differing numbers of instruments. The disk also contains a folder of demo songs, permitting rapid auditioning of styles without the need to enter songs yourself. There are so many styles provided that you may never get round to producing any of your own!

Major change number four is the provision of a built-in sequencer, so you can now record a melody line along with all those accompaniment parts. Previously, Band-In-A-Box was purely an accompaniment generator, but now you can use it to record and play back complete MIDI songs! The sequencer's functions are accessed from a new pull-down menu, which covers real-time recording, quantising, step-time note editing, insertion/deletion of beats and bars, transposition, and sundry other functions. The supplied MIDI "fakebook" disk contains over 100 complete songs created with this feature, and most of them sound really good.

Other new but less spectacular improvements include the ability to mute instruments on demand; change from straight to swing feel and vice-versa; support for additional chord types; MIDI support for instrument volume, panning, reverb, and chorus effects, and patch bank switching. Full support for Roland's SC-55 Sound Canvas synth expander is included too, as this was the first instrument available to use General MIDI.

The only complaints I have are that StyleMaker seems to crash whenever you exit from it, and the program's facilities have now begun to outstrip the capabilities of my computing and MIDI setup! It's now relatively easy to run out of memory with only 1MB, so I'll have to make that long postponed upgrade to 2MB soon. Also, the 8 note polyphony of my Yamaha YS-200 synth isn't enough for properly handling 5 part styles - I have to route excess notes through to my old Yamaha PSS-680, which really isn't in the same class sonically. Another expensive upgrade coming soon, perhaps?

I've always liked Band-In-A-Box and its continuing evolution has turned it into one of the most useful MIDI music programs around. It's generally easy to use, produces professional sounding results, and is great fun too. And with StyleMaker you now have all the flexibility you could want for producing your own unique styles. It's an essential tool for anyone interested in making music with their ST. Once you buy it you'll wonder how you ever managed without it!

SUSPICIOUS CARGO

At last another superb text adventure! But before any of you who may think you don't like text adventures stop reading - remember that this is the nineties - things have changed! Yes, there is lots of text that you have to read, but it is a good plot and there is lots of humour. No, you don't have to type anything! Yes, there are lots of pictures and even arcade sequences for you to play as well!

In the same way that games like The Secret of Monkey Island, Cadaver, Elvira, and Spellcasting 101: Sorcerors Get All The Girls (sadly not available on the ST) have broken new ground in order to provide the games-player with a detailed adventure driven by mouse and joystick, so too Suspicious Cargo has lots of brilliant ideas crammed into it to make playing an adventure more fun than ever before.

Traditionalists CAN type in commands if they want to, and reconfigure the screen to remove all the non-text areas. Or you can just point and click at the icons which scroll up and down the left side of the screen. As soon as you click on a verb the list is replaced by pictures of all the items in the room or in your hands so that you can select one of them. In this way you can build up sentences like "PUT THE RED KEYCARD IN THE SLOT" with a few mouse clicks.

People you meet in the game appear in little monitors across the top of the screen, movement is done by clicking on flashing compass points at the bottom of the screen, some locations have full screen pictures you can access - often with animation - I love the main ship's console on the bridge, with the central screen playing Space Invaders!

All the things that make adventure games easy to play are built in - ability to recall and change the last thing you typed, RAMSAVE and RAMLOAD as well as standard ones to diskette, large letters if you wish to see it better on a TV, an so on.

There are half a dozen places where the game switches into arcade style with full screen graphics - solving a circuit board puzzle, fighting off pirate boarders, tracking a deadly alien through a maze, trying to land a ship through an asteroid swarm. Although the sequences are short they are great fun and if you don't like them or can't solve them (the landing is VERY hard!) you can bypass them - you lose a few points, but you get to carry on the game! An excellent design!

So, the implementation is super - definitely an adventure for the nineties.

What about the adventure itself? You play the part of Jonah Hayes, a space bum with a clapped out spaceship. Your day starts badly enough when you are woken with a message that you have been hired to transport a crate to Earth and they DON'T want customs to examine the crate! IF you can avoid the thugs who are out to get you before you even reach your ship, and IF you manage to get the ship off the ground, and IF you can work out how to repair the ship's computer so that you can warp away from the official ship which wants you to heave-to and be searched, THEN your troubles are only just beginning!

The game is subtitled "Out of Luck in Outer Space" and they mean it! If it can go wrong it will go wrong - your ship is low on air, you have an illegal hitchhiker, the genetic mutant in the crate breaks out and wants to kill you, pirates try to board your ship, death lies in wait at every turn - thank heavens for a RAMSAVE!



"lots of brilliant ideas"

Mapping is also a thing of the past! Most of the action takes place on three spaceships, just click on the A2Z icon and you get a full screen map of the ship. Click on an area for a detailed plan of that section, showing not only the rooms but also where all the other characters in the game are! Click on an area and the game takes you straight there! Superb!

The game isn't quite perfect - the parser has a couple of minor idiosyncracies, for example I occasionally got confused as to whether I should put something ON or IN something else, the cable on the codebreaker only appears if you put the codebreaker down, and you need to resort to the keyboard once or twice to save yourself a lot of time by typing GET ALL or DROP ALL. But overall, especially for a first offering from a new team, the game is great!

- ***SIGHT & SOUND*** - *Lots of great graphics, nice music on the intro*
- ***GAMEPLAY*** - *Excellent mouse-driven interfaces, lots of places to explore and lots of puzzles to solve*
- ***VERDICT*** - *A must for all adventure players, and if you have a warped sense of humour and like a challenge you should definitely give it a go*

Title:	**SUSPICIOUS CARGO**
Publisher:	**Gremlin/Exile Designs**
Price:	**£25.99**
Reviewer:	**John Sweeney**

MANCHESTER UNITED

This game is an interesting hybrid. In the world of soccer games this one lives in two camps at once and makes a good effort in both. Manchester United for those who do not know are an English Soccer team with a great deal of history. They also have a very good recent record of coming second in nearly all of the major competitions and this game seems to be set up to help the player manage something very similar although there is a slim hope that the player might win!

Play consists of two separate sections - management and matchday. The management portion includes all those mundane things that Managers obtain large salaries and spectacular firings for and the match day is where all the earlier machinations pay off (or don't as the case may be). The management side of the game follows the precept set down in the classic Football Manager although it manages it in a more graphic and supportive way.

The game assumes that the aspirant player wishes to coach Manchester Utd. although there are menu options to allow you to change both players and team names and as such it is quite possible to have Roy Race as player/manager of Melchester Rovers. The first management task is to look at the team. This is done by clicking the team photo and produces the list of signed players and their ratings in their various skills. In a separate menu there is the training log. Here the same players are shown in their state of training. It is, however, a little confusing that Goalkeepers are assumed to need the same skills as strikers and whilst I am happy to accept that Centre Forwards need to learn the art of 'finishing' it seems a little pointless for the man in the nets! There is no corresponding 'saving shots' skill. Despite this sort of anomaly the training seems to have beneficial effects on players apart from those strenuous days when they get injured.

There are also quite complete transfer menus that allow almost any player in the league to be bid for and, true to the United open cheque book ethos, there is no budget imposed on the manager and so four million pound deals are quite in order.

Once the training and transferring has been taken care of then selecting the team for next week becomes necessary. This is done from another sub menu and its selection also informs you as to the training injuries sustained that week. Although it is possible to see your schedule there is no option to scout the opposition and so your preparations are blind. Several formations are on offer as the root of your team and once this has been selected you are prompted for someone to take each individual position. There is no apparent idiot proofing here so it is perfectly allowable to play centre forwards in goal. Maybe this is why it is possible to train goalkeepers in finishing?

Should you make a mistake and not notice it before the last player is selected there is no chance to change or review the team. Once the last man is picked the game sequence begins. The game has all the advantages of being innovative and exciting and can last from 5 to 45 minutes each way. It can be played by the computer alone as a simulation or by the player using the joystick in Kick Off fashion.

The sprites and match play look good with whistles and yellow cards but unfortunately there is no player identification so that you cannot tell which player performs well or who scores. Still it seemed to me that scoring was a lost art. The teams seemed to attack but both goalkeepers had second sight and positioned themselves correctly most of the time. My record after six games was Played 6 Won 2 Drawn 4 Lost 0 Goals For 2 Goals Against 0. This did not lend itself to exciting or enthralling football. Had I not been selecting the all out attack mode of football with five forwards and two in defence I suspect no goals would ever have been seen!

Once the match is over there is no post game evaluation apart from comments in the one paper you may read at breakfast and no other results so you can't check on others performance. It is of course then back to training, trading and playing after breakfast.

This game is a collection of could have beens. It never quite manages to make the mark in any of the areas it tries to score in. Much like the real United all the promise is there but it seems to excel in coming second. Lets hope they never make one called Rochdale Soccer!



Title:	**MANCHESTER UNITED**
Publisher:	**Gremlin Graphics**
Price:	**£25.99**
Reviewer:	**Damon Howarth**

- ***Gameplay*** - *Sluggish but accurate; fairly friendly controls*
- ***Sound and Graphics*** - *Good enough to be interesting in both departments*
- ***Overall*** - *If the nets were wider and the players better they might have scored higher with this one!*

MORE HIGH JINX with the Lynx

ROBOTRON 2048

The Copyright notice is for 1982! Some of our older readers may have played this one before on their old 8-bit! All the fun of the original is faithfully recreated here - each level is just a single screen with you in the middle and countless baddies closing in from every direction to kill you. Dodge and fire as fast as you can and you might survive a few levels. Rescue some of the innocents wandering around the screen before they go splat and you gain enough points to get some more lives and survive a little longer!

You get to choose between THREE different ways of using the controls, each designed to allow you to move in one direction while firing in a different one. Everything happens at very high speed - the first few times you will probably die before you have worked out what is happening, but like all the best games it is really incredibly simple and you will soon be able to blast your way through the first half dozen levels in no time at all. Again, highly addictive - you KNOW you can get a little further next time!

Plenty of variety in the enemy - some chase you slowly but are practically indestructible, others come in fast but die easily, some shoot at you, others generate more nasties that bounce all over the screen.

Definitely a golden oldie!

NINJA GAIDEN

Ninja Gaiden is a one-player beat 'em up. The levels and enemies are much like those of Shadow Warriors on other machines.

There are 4 different levels to battle through, with a limit of 99 seconds per level (or life): the City, the Casino, the Station and finally the Palace, where you will meet the Dark Lord armed with razor sharp sabres. There are 8 different enemy types starting with street thugs and ranging up to giants and other ninjas.

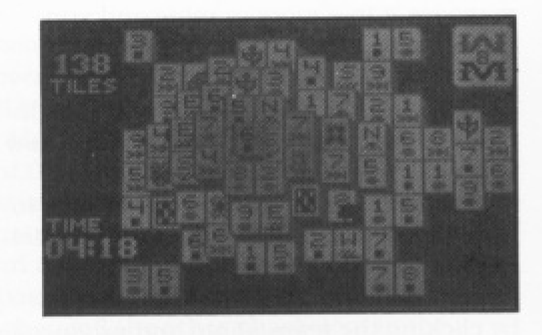


You begin the game with three lives, each one consisting of five "knock-outs". Being hit and knocked down loses you one knock-out. You also have a couple of Continues which you can use whenever you lose all three lives to carry on from where you died (but with a zero score).

On your way you will pass many telephone boxes, tables, storage boxes etc. If either you or an enemy is knocked over into one of these objects it will instantly be trashed and if a special item was inside it you will be able to collect it. You can collect blue and red pills to restore knock-outs, precious stones for points, extra lives, more time, or a sword. While you have the sword you can knock down anyone with only one hit and you do more damage than normal.

Your fighting moves are a little limited, but the action is fast and furious and Ninja Gaiden will appeal to all those who love a good fight!

SHANGHAI



Mah Jongg is an ancient Chinese card game - using tiles instead of cards; they have three suits numbered one to nine, plus four winds and three dragons, but there are four identical tiles of each of these. They also have eight special tiles called seasons and flowers making a total of 144 tiles. Mah Jongg itself is just an oriental form of Rummy or Canasta for four players, with some complicated scoring rules. In the same way that we play solo patience games with a pack of English cards, the Chinese play a form of patience with a Mah Jongg set. Shanghai is such a game.

You choose a pattern: Dragon, Hawk, Butterfly, Fish, Bear, Spider or Turtle (some are harder than others). The tiles are dealt out randomly into that pattern. A move consists of pointing at pairs of identical tiles that are both free to slide out to either the left or the right, thus clearing the way for more tiles for you to match. To win you must clear ALL the tiles from the screen!

An options screen allows you to get hints if you are stuck (the computer will show you one of a pair of tiles that can be taken away), restart with exactly the same deal, quit, or change the way the tiles areshown. The tile you are pointing at is always shown enlarged at the side of the screen. One limitation is that you can't take back a move if you get stuck - this is available on most other versions of the game.

Two player options allow alternate play (ten seconds per move) or simultaneous where if one person selects a tile you can select a match and get the points!

A great way of passing the time if you like patience games!

HARD DRIVING

More car racing, this time with a choice of a traditional race track or a stunt course involving leaps and loop the loops! The ST version was hard enough to control, I found this even harder! You have to tap the joystick to steer, but I found it too sensitive and had great difficulty staying on the road. You need to control your direction and speed very carefully in order to get around the track in the very limited time allowed, and just when you are doing well some idiot crashes into you from behind with no warning whatsoever!

Fortunately you can select automatic gear changing if you wish so that is one less thing to worry about, but even with that after three or four hours of playing I had still not completed a single lap of either course, although I did manage to get round the loop the loop once!

The 3-D graphics are excellent, no flat roads here - if you are going up a hill you can't see which way the road bends on the other side! If you succeed in achieving the challenge times for a lap you get to race again against the Phantom Photon!

Definitely one for the dedicated driver!

TOKI

The evil wizard Vookimedlo has captured the Princess Miho, and hidden her inside his evil palace. The only person who is able to save Miho is Toki. Vookimedlo is well aware of this fact, so he turned Toki into an ape! Toki must find and defeat Vookimedlo to rescue the princess and to attempt to turn himself back into a human.

Toki is an arcade game, full of nasties, traps and puzzles. The easiest way to kill things is to fire your breath weapons. At the beginning of the game this is just one single small bolt. Along your way you will find items which will make your breath weapon better e.g. triple shots, large shots and fire, although these only last for a limited amount of time. You will also find special items such as helmets which help protect from monsters, and rabbit boots which allow you to jump much higher than normal. Another method of killing things is to jump on their heads, though it often takes more than one bounce to kill things.

One very annoying thing about this game is that you lose a life if you are hit once, and it is often hard to see what actually killed you. You begin the game with four lives and two continues each consisting of four lives.

Toki is great fun but also extremely hard (because you can die so easily), especially as you have to start from the beginning every time. If you enjoy challenging arcade games this is definitely a must.

SUPER SKWEEK

Skweek's mission is to conquer five islands, each consisting of 50 levels, unfortunately each level is packed full of monsters and traps.

To complete most levels Skweek has to paint all the squares pink, but on some he has to kill all the guards or rescue all the Skweezettes. There is a time limit for each level, some are extremely tight while others give you lots of time to spare.

Kill monsters, collect their coins, and then buy power-ups at the shops which occur every couple of levels. Power-ups may enhance your shots or increase the number of squares you paint, others can give you extra lives, put you onto the next level or change your speed. There is an incredible variety of monsters, traps and power ups and lots of ways of restarting so that you can reach lots of different levels very easily. One way is to gain the ability to buy restart codes at the shop so that you can continue from that position next time you play. Don't get codes too often though because you're only allowed twenty codes per game and there are two hundred and fifty levels! A two-player version allows both of you to paint tiles at the same time, but if you want you can get nasty and push each other into holes!

An excellent fast moving arcade game crammed full of goodies - just as good as the ST version (see the full review in issue 51)!

CRYSTAL MINES II

And I saved the best for last! Remember Boulderdash? Or Repton if you used to have a BBC? Or the countless clones which featured little men digging their way around endless caverns, avoiding falling rocks and dodging nasties that tended to follow the walls in endless circles? Well here's another one! BUT... it is absolutely brilliant. It is the best version of this sort of game I have seen for years.

No wimpy little shovel for this guy though, you get a robot who can blast his way through most things with his own energy bursts. But although this plays very much like Boulderdash for the first few levels it just keeps getting better and better. I am up to about level 79 out of 150 and I still keep finding new monsters, traps or power-ups every few levels. The amount they have crammed into this game is incredible. Monsters can be invulnerable, radioactive, exploding, bouncing, and so on. There are tubes which convert boulders into gems (or vice versa!), radioactive boulders, boulders which are actually sleeping monsters, boulders which conceal dynamite, etc. There are four elements which spread through any empty spaces, and all have different properties - some trap you, some turn into gems when shot, it just goes on and on.



Loved the gravity switches! Touch one of these and the rocks start falling sideways!

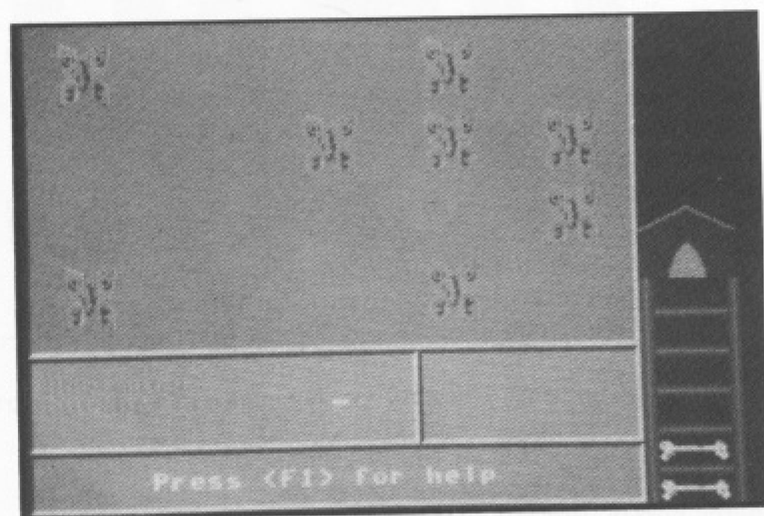
And there are another 31 bonus levels if you can find the entrances to them; all levels have passwords so you can restart anywhere, and if you get stuck too long on any level the game will offer to tell you the password and let you move on to the next level - very friendly.

A lot of effort has been put into making some really fiendish levels in this incredibly addictive game!

SUMMARY

The Lynx is still an excellent machine - especially at some of the prices I have seen it going for - Special Reserve (0279-600204) were selling off reconditioned Lynx 1s for £49.99! And with the range and quality of games it is hard to fault it. Rush out and buy Crystal Mines II now!

COUNT AND



Here are another two ST based educational packages from Scetlander Software, this time designed to help younger children get started in arithmetic and to develop pre-reading skills. As with most educational software today they're both designed to fit into the National Curriculum where possible.

COUNT AND ADD

The package contains one double sided disk and comes complete with a free badge and a glossy 34 page instruction booklet. It's based on a Scetlander program for the BBC Micro used widely in schools throughout the UK, and uses Shades the Dog as a theme character. It's aimed at the 4-7 year age group and contains five learning games - Sets 1, Sets 2, Animals, Train, and Spider, plus a real-time clock and calendar screen. The games are unusual in that they make extensive use of sampled speech in their operation.

SETS 1 - covers the counting of objects. It displays a set of identical objects on the screen from its library of 24 different pictures. You count them by repeatedly pressing the Space Bar, which increments a large numeral displayed on the screen. When the correct number is shown you press the Enter key, and the program tells you if you're right or wrong.

SETS 2 - similar to Sets 1 except that the program asks you to "find n objects" where n is a randomly selected number. Pressing the Space Bar now causes objects to appear - keep pressing until the correct number of objects in the set have been revealed. Otherwise details are as for Sets 1.

ANIMALS - moves on a stage from Sets 2 in that you have to key in the correct number from the ST's keyboard instead of pressing the Space Bar. All the displayed objects are animals, hence the game's name.

TRAIN - introduces the concept of addition. A set of objects is displayed and counted as in Animals. If correct a train puffs halfway across the screen and a second set of objects displayed. You then repeat the procedure and if correct again the trains puffs across further, causing the two sets of displayed objects to amalgamate into one large set. You then key in the total number of objects in this.

SPIDER - similar to Train in concept, but increases the difficulty by introducing a time limit. You have to complete six addition problems before the spider crawls across the screen to catch the butterfly.

CLOCK AND CALENDAR - this is just a single screen displaying analogue and digital clocks working in real time (with seconds display), and a calendar for the current month. The correct time/date are obtained from the information you key in when you boot up the program. You can't interact with this screen in any way - it's just for viewing and discussing with the children.

The program uses a mix of sampled speech and chip generated sound throughout. The speech (male voice with a very light Scots accent) is used for prompting for input and commenting on your performance. Each speech phrase is loaded from disk when needed, and this slows things down a little on a floppy disk based system. The chip sound consists mainly of random burbling sounds accompanying Shades the Dog's presence on the screen, plus a few other miscellaneous effects.

Graphics are neat and well drawn, but sparse. The objects are displayed on a light blue background which makes some of them difficult to see sometimes. Shades the Dog doesn't seem to be featured much at all - his main appearance is on the summary screen at the end of each game, where his animation is limited to rolling eyes and a wagging tail. In fact the whole program has very little real animation.

All the games run with pre-set default parameters, but these can be changed from the Parent/Teacher screen. You can toggle sound on/off; set the spider's speed for the Spider game; the number of problems asked in a game; the number of wrong answers allowed before the program displays the correct one; lowest and highest numbers used in the problems; and to select the style used for arithmetic operators. You can also choose whether to hide this Parent/Teacher facility so the little perishers can't get at it, and to activate the program's results monitoring facility.

A common system of providing help is used throughout. If a wrong answer is given you're prompted to count again. This continues up to the limit set for retries in the Parent/Teacher screen, at which point the program counts the objects for you, incrementing a numeric count while speaking the numbers and highlighting each object in turn. You then proceed to the next problem.

The program can monitor and record the results and progress of up to ten different children. They're identified by name - keyed in each time they use the program. Results are held on disk and may be viewed and printed out when required.

Count and Add has all the hallmarks of a good educational program - except one! It's fine on the educational front, is easy to use, has good help facilities, and can track results. Unfortunately though it's rather weak on the "entertainment" aspect, that essential ingredient which delights children and holds their attention. This could easily have been fixed by better exploitation of the theme character and better use of animation.

MIX

JOHN S DAVISON FINDS OUT THAT SCHOOL ISN'T ALWAYS FUN!

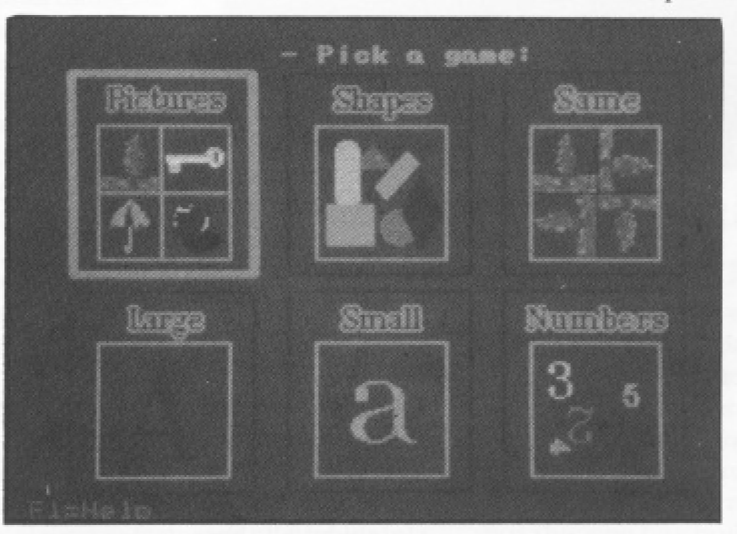
MIX AND MATCH

This program is supplied on one double sided disk, and the package includes a separate "quick-start" guide for the ST and a 12 page instruction booklet. It's aimed primarily at the under 5's age group, but again it can be used by anyone with particular learning difficulties. Big Maggie (no, not Mrs. Thatcher, but a relative of the Loch Ness monster?) is the theme character this time.

The program's purpose is to help children develop pre-reading skills such as recognition, discrimination, and memory. Also, as with most computer based education aids it helps the child acquire keyboard skills and builds confidence in using computers. The program is divided into three main sections, each of which contains six learning games. In addition there's the "real-time" clock and calendar as found in Count and Add.

TWO OF A KIND - requires you to match an object displayed in the centre of the screen with one from a set of up to four displayed below it. A pointer moves automatically in sequence from one object to the next, and you have to press the Space Bar when it's above the one which matches. All six games use the same operating principle, but use different objects. They're called Pictures, Shapes, Numbers, Large, Small, and Same. The first three are self explanatory; Large and Small use upper and lower case letters of the alphabet respectively; and Same uses just one object, but in up to four different orientations, i.e. rotated in 90 degree increments.

ODD ONE OUT - uses the same six games as above, but this time displays up to four objects, up to three of which are the same (but possibly in unusual orientations) and one different. You have to press the Space Bar when the automatic pointer hovers over the odd one out.



FORGET-ME-NOT - again uses the same six games. Here only one object is displayed for a given period of time and is then removed from the screen. Up to four different objects are then displayed, one of which is the same as the original object. You press the Space Bar when the pointer moves to that object.

CLOCK AND CALENDAR - as in Count and Add.

The program uses sampled speech again, but this time it's a female voice with a soft Scots accent, presumably Big Maggie's. It's dynamically loaded from disk again, so imposes the same performance penalty as in Count and Add. There's a snatch of music on the summary screen at the end of each game and a few sound effects here and there, but otherwise there's not much in the way of sound.

If anything the graphics are even more sparse than in Count and Add, with no animation at all to spice things up. Looks like animation isn't Scetlander's strong suit! Big Maggie appears occasionally as an object in the games and again on the end of game summary screen, but this hardly merits the title of "theme character" in my view.

As expected there's the usual Scetlander Parent/Teacher screen for modifying the program's operating parameters. This includes toggling the sound on/off; setting the automatic pointer's scan speed; the number of questions in a game; the number of objects shown at any time; the display time in the Forget-Me-Not section; the number of attempts allowed before the right answer is shown; whether the Parent/Teacher facility should be hidden; and to activate the results monitoring facility (which is identical to the one in Count and Add).

If you repeatedly answer any problem incorrectly the program's help facility responds by inviting you to "try this", while positioning the pointer over the correct object. This forces you to select the correct one before continuing.

My overall opinion of Mix and Match is virtually identical to that for Count and Add. As an educational aid it's fine, but it doesn't really have enough FUN built into it. Scetlander really should put more thought into the entertainment and reward side of their programs, some slick animation and better use of sound could work wonders here. It could turn these rather ordinary educational programs into something special.

COUNT AND ADD
MIX AND MATCH

Scetlander Software
£25.99 AND £24.99
Reviewed by John S Davison

SUPERHEROES 2 and CHART ATTACK



Once more to the compilations dear friends, this time an interesting exercise in comparing the marketing strategies of two companies. Domark whose Superheroes 2 was sadly marred by the by now almost standard faulty disk and Gremlins release of old classics.

SUPERHEROES 2 includes Indiana Jones and The Last Crusade, Last Ninja 2, Strider 2 and the not to be forgotten The Spy Who Loved Me. The Spy seems to sneak it way on to every Domark collection I review and it still seems the same! It is still a collect a vehicle and drive it to the next stage having shot some baddies on the way. The graphics are still strong and the sound still good. Unfortunately anyone having bought any other collection in these lines will already have several copies of this particular game.

Last Ninja, unfortunately, did not want to load so I will concentrate on Indy and Strider. The Indiana game is well presented and loses nothing from coming in this boxed set, for although this is the original came with lots of add-ons, the important parts are still there and all the clues are available. The graphics and gameplay in this are strong with good linking scenes to enable player interest to stay high starting, as did the film, with the Boy Scout Indy and working to the climax in a logical progression of scenes. There are several digitised shots from the film, controls are positive and the colours strong.

Strider 2 is a worthy successor to one of my personal favourite arcade games. With his victory over evil in the Soviet Union complete he now takes on the forces of another planet. The format is fairly similar, only the game now takes place on the planet Magenta and Strider can turn into a bio-battlebot. I like this game, it has the super hero style to it. The graphics are colourful and comic book like with the whole giving the impression that the player is actually inside an adventure story.

CHART ATTACK offers four raves from the grave Lotus Esprit Turbo Challenge (1), James Pond, Ghouls n Ghosts and Venus Fly Trap. As an encompassing statement all these games are strong and have all made best seller lists in their time. The weakest is the Turbo challenge which takes a long time loading and offers race course driving in a fast Lotus. The graphics are just above average and the controls simple, on the other hand it seems to offer a little more than its successor does, not a bad race game for its time. Ghouls N Ghosts is the successor to Ghosts N Goblins and offers the further adventures of the knight Arthur in his search for his captured girl friend. The graphics are small but beautifully formed and the controls flow smoothly. The problems are at the hard end of fair and the monsters, although prolific, are not too awe inspiring. An entertaining little romp. Venus is a different sort of platform game, you play a robotic fly that is out to rid the world of mad robotic insects. This is done in free flowing and challenging platform and ladder style. A range of collectable weapons are available as are bonus pods allowing different abilities. This game is another fun game that proves the computer can still outclass even dedicated game machines.

Finally in this set is my favourite game of this issue, James Pond. This game has humour, problems and variety. In case the game has escaped your notice in the popular press, it concerns a secret agent cod whose job it is to save various maritime creatures from eco disasters. There are twelve scenarios each with a variation on a Bond title for example Licence to Bubble or Leak and Let Die. The humour continues in the game with Pond looking for villains and freeing the innocent while becoming occasionally sozzled on J. D. Whisky. There are many hidden caves with bonus scores in them and of course there is always Pond's house in which items may be stored until subsequent adventures need them. With good cartoony graphics, a sense of humour, responsive controls and problem solving, this game alone makes the collection worthwhile.

As may be obvious I greatly preferred Chart Attack as it offers four good value games of which at least three will leave the player wanting more when they die. The Domark set has games with a more arcade feel to them, but maybe a polished professionalism that somehow leaves them a little sterile. All the same there are two and possibly three rattling good games on the Domark set, I do wish they would stop trying to put the James Bond thing in every pack though.

All in all both are bargains if you do not have the originals.

- ***GAMEPLAY*** - *Most of the games on both packages are of high standard, and all scroll smoothly and react well to joystick commands*
- ***SIGHT & SOUND*** - *All are acceptable, Superheroes uses more sampled and digitised stuff, Chart Attack has good effects to it, all are graphically strong*
- ***OVERALL*** - *Two strong packs - either could be a bargain, my favourite though was the one from Gremlin*

SUPERHEROES 2
Domark £29.99

CHART ATTACK
Gremlin Graphics £29.99

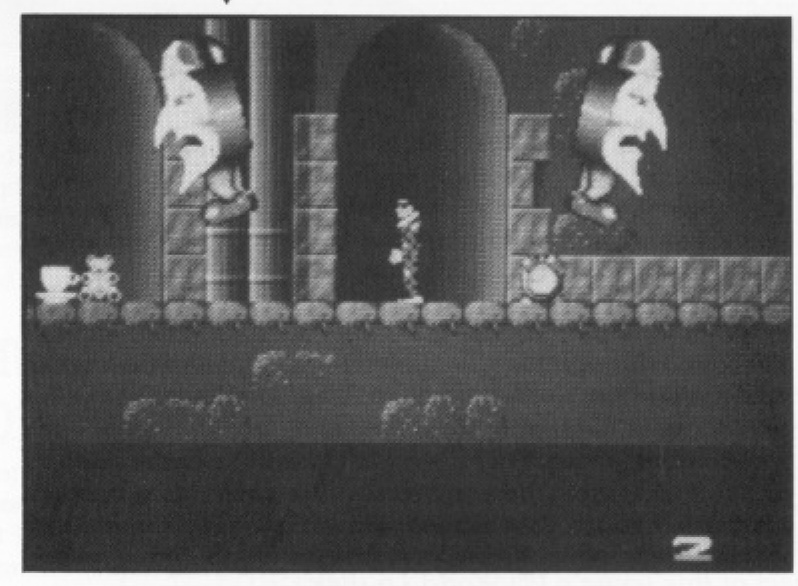
Reviewed by Damon Howarth

HARLEQUIN

Once upon a time there was a game called Prince Of Persia and all of those that saw it said that it was wonderful and that the sprites did move in realistic manner and that it represented new horizons in arcade adventuring. It seems in the land known as Chimerica these legends had also appeared and inspired the country to bring forth Harlequin. This storyline involves a child who left a beloved country made only for him to learn of the outside world. The learning he came upon kept him away for many years and in that time Chimerica suffered a broken heart and fell into disrepair and chaos. On his return the now full grown hero called Harlequin saw that he needed to set about recreating the broken heart of the land. Such was his sorrow that he felt the only way to do this was to appear in a game that was even better than Prince of Persia.

Indeed the game was better with a slightly smaller but wonderfully animated hero sprite who could perform exciting gymnastics and fire small hearts from his hand to the great discomfort of his enemies. Here the Harlequin must obtain entrance to Chimerica and mend its rusted clock tower finding the four parts of its sundered heart on the way. Controlled by positive joystick commands he must wend his way through some complicated screenery.

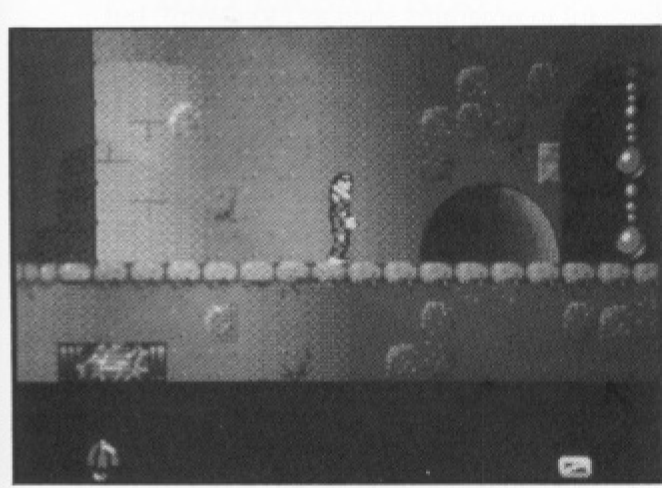
The harlequin is superbly animated as are the evils he must fight. Large heads and alarm clocks try to ambush him as he hunts for the various switches that will power the sliding platforms and enable him to climb ever higher. Each of the actions of the hero has a direct bearing on the world around him - the faster he runs the better his jump, he must run up slopes much like Gene Kelly used to dance up walls and if he should be falling from too great a height then his umbrella needs careful timing to use.



As with all platform and exploration games there are always bonuses to find and these are generally in keeping with the refinding of the Harlequin's youth. He finds Jack-in-the-boxes for mystery prizes and obtains bonuses for recovering teddy bears. He needs to find his Space Hopper in order to bounce further, higher and faster or he may need to turn into an Angel fish to enable some of the wetter parts of his adventures to take place. Just like Strider he can find long term protection not with a sword but with a selection of firework rockets. The Harlequin eats burgers to maintain his energy and drinks cups of tea on the way round. The whole complex backdrop to this adventure is like a demented Babes in Toyland!

Bonus stars allow the Harlequin to stock up on bonus lives and the operation of a load and save feature allows for the completing of sections without the monotonous task of repeating first levels on repetitive basis.

The game even comes with built in help systems. Where light bulbs glow it is possible to wait and then a message will appear suggesting some cryptic course of action, spurring a jaded player's brain to further achievements. The game levels even change occasionally depending on actions in other quarters and it is always wise to keep a weather eye open just in case the screen you used earlier has changed and something you need has just appeared.



Title:	**HARLEQUIN**
Publisher:	**Gremlin**
Price:	**£25.99**
Reviewer:	**Damon Howarth**

" no qualms about recommending it "

The game attempts to compare itself to Prince of Persia which I find is unjust to Harlequin since this is a better defined game with more colour and variant in game play. Both games have well thought out spites and intermission sequences but this one has built in atmosphere and despite the lack of a Columbine maintains interest far more. The major strength in this game is its use of colour and atmosphere and the underlying feel it has of attempting to regain a lost youth. The authors may be attempting to bring out some deep philosophical meaning but for me it works much like an extension to Peter pan in Hook.

This was my favourite game of this issue's review crop and I would certainly have no qualms about recommending it to anyone with the youth of heart to appreciate its message. There is no real violence in the game as Harlequin destroys evil with love. Some of the game left me in mind of the Beatles struggles against the Blue Meanies in Yellow Submarine.

A game that deserves to be bought and as soon as possible!

- ***Gameplay*** - *Outstandingly responsive with many imaginative touches*
- ***Sound and Graphics*** - *They complement each other very well and are both very strong*
- ***Overall*** - *Excellent, innovative and addictive. Buy one one now!*

PD Paul Rixon's WORLD

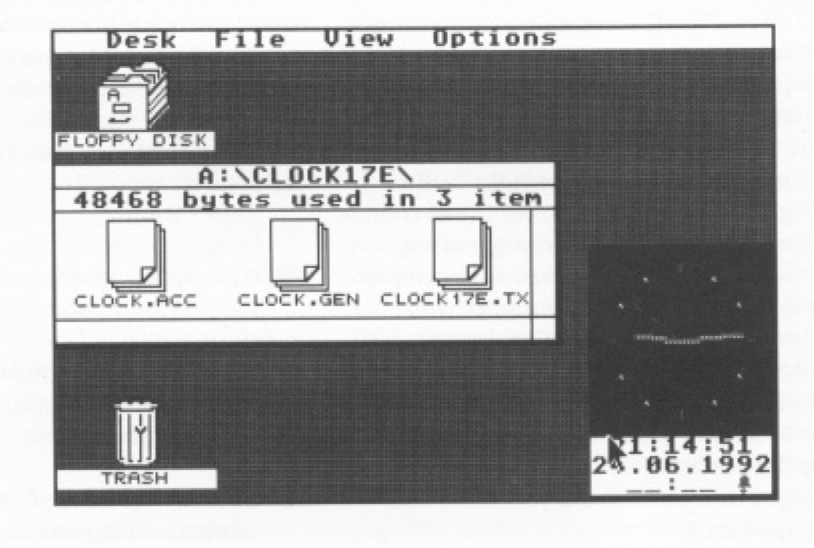
One of the drawbacks of PD disks (in my experience) is that once you've built up a sizeable collection, the time it takes to actually find a program you need can undermine the advantage of using it in the first place! For example, what's the point of an ultra-speedy disk formatter that takes half an hour to find! The solution, of course, is to store all the useful tools on one disk ... which just happens to lead very conveniently onto the subject of this issue's PD World - a disk called ***30 USEFUL UTILITIES***.

KEYBOARD ENHANCER

First up are ***Accent*** and ***Argus***. Accent provides your ST with two functions that any PC user would take for granted. Once installed you can enter any special character (a copyright symbol for example) during text input by holding down the Alternate key and typing the ASCII value on the numeric keypad. Release Alternate and up pops the corresponding symbol! Also, if you have the CapsLock key switched on you can press Shift to obtain the lower case letters. Argus is more specialised in nature and will appeal primarily to programmers. It offers a painless way to keep track of disk i/o operations performed by a running program. Argus intercepts a Bios call and retrieves various information such as the error number, call address and read/write status. If you understand what it does, you'll probably find it useful! The assembly code source file is included.

BOOT UP CHOICE

As its name suggests ***Bootplus*** is a boot enhancer - it lets you choose from three alternative Desktop.Inf files when you switch on your ST (one for each screen mode). Along with the resolution you can select the programs you want to 'auto' run. ***Cut & Paste*** comes into its own when you want to split a very large file into several smaller pieces - perhaps for transportation via floppy - and subsequently paste them back together. All you do is enter the respective file names and the size of the chunks you need - the default is 713K, as this fits nicely onto an IBM formatted double density disk. ***CheckHD*** assists hard drive owners who want to monitor statistics relating to their hardware, such as access times and transfer rates. You can choose between four different test scenarios (access speed, read integrity, transfer rate and all three) and various hard disk types. Choosing the right option is important because CheckHD can't handle a SCSI hard disk's responses in the Atari mode and vice versa (maybe one day Atari will learn the meaning of 'standard' - or maybe not...). ***Clock*** is a German program that carries out its obvious function with the option of a digital or analogue display. It seems to have an alarm too, but unfortunately the instructions aren't translated into English!



An easily readable analogue clock - you can't miss this one!

INTRIGUING STUFF

Double Click Software seem to have the market licked when it comes to creating useful - or at least, intriguing - routines. A prime example of the latter category is ***DC Mouse-ometer***. This tells you how far your mouse has moved during your conscientious sessions at the micro - but only if the machine is kitted with Atari's new extensible control panel, Xcontrol. Mouse-ometer displays the total distance in inches - I'm not sure why you'd want to know this, but if you use an ST at work you could try submitting a mileage claim for mouse travel! As you'd expect, ***DC Mouser*** is another rodent accessory. It solves the problem of an unwanted mouse cursor by hiding and revealing it at the command of a key combination. Another solution is the ***DC Mouse Saver*** which switches off the cursor after a period of non-activity. Meanwhile, ***DC No Alert*** suppresses the standard alert box and automates the selection of the default button. For example, an alert that said 'okay to continue?' would be bypassed, and the assumption made that your answer was yes. This might be useful in programs such as First Word, but is a little worrying when applied to disk utilities (do you really want to format? Yes!). With ***DC PopBar*** you can have a 'popup' menu of the normal menu bar entries at the current position of the mouse pointer. Next is a utility that automatically switches screen resolution before running a program, and then switches back when it exits. ***DC Run Rez*** needs to be told the required resolution for each of your programs - all you do is change the last letter of the file extension to the corresponding number.

BENCHMARKS

Dos Tester will add to your arsenal of benchmarks. On running you're presented with a choice of three tests - create/close, open/read and seek. You can

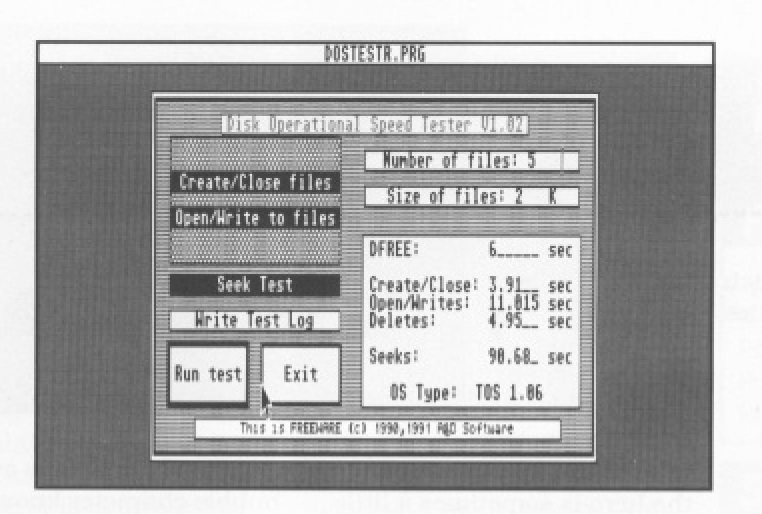
choose the number of files to test with, and the size of each file. The results are written to a log file on disk. ***DStat-X*** reports on numerous disk-related parameters such as the total disk size, boot sector type, number of sectors per track and amount of free disk space. DStat-X operates happily on hard drives as well as the floppy variety. Another handy tool, ***FindDup*** looks for duplicate files in a disk directory tree. If it finds any it writes the relevant information to a text listing. This could be useful for tidying up a hard disk, where you might have various old versions of development files. Also of interest to hard drive users, ***FindMac*** searches disk drives for filenames matching a specified pattern.

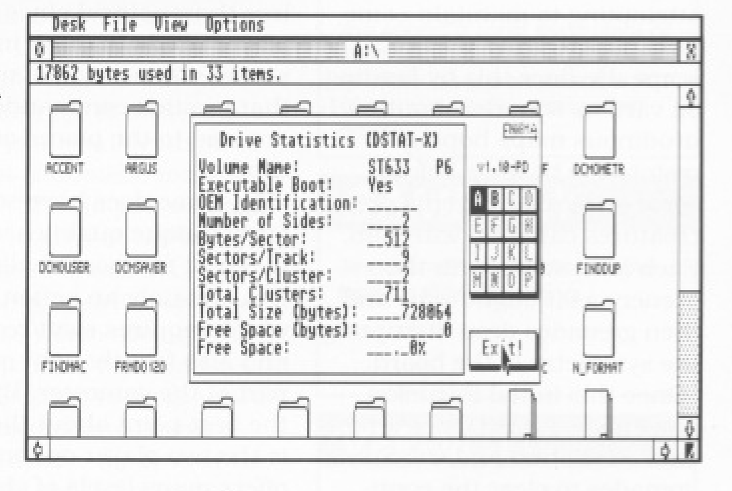
CHANGING THE LOOK

FormDoIt lets you alter the way that GEM dialog and alert boxes appear in most ST programs. You can use the keyboard to select buttons in the dialogs, position the edit cursor anywhere in an edit field with the mouse, enter any ASCII character from the keyboard, redefine alert icons and many other things besides. ***FSelect*** is a shareware routine that once appeared in ST Format magazine (but never mind, it's probably quite good!). It's a replacement file selector with lots of clever options. You put it in your AUTO folder and then whenever your programs need a file selector box FSelect will appear instead of the standard, and not particularly friendly, Atari offering. The philosophy is that programs should be comfortable to use - therefore, whenever possible you can just point and click with the mouse. Eleven pages of explanatory notes guide you through the features.

DIFFERENT RES?

LowSwitch handles the problem of programs that require different screen resolutions - once installed, you can load your medium resolution programs in low resolution and vice versa, thus avoiding an unnecessary trip to the relevant desktop option. ***MClock*** is a simple on-screen clock that delivers its message in twelve or twenty-four hour format, or even in 'metric' time where each hour is a hundredth of a day. ***MDFormat*** formats disks with musical accompaniment from the Midnight Express theme, in a user-specified mode. Its purpose is two-fold as the heavily commented source file serves as a good tutorial for those learning 68000 assembly. On a different note, ***MonMagic*** turns your expensive colour monitor into a green or amber screen, just like the early PC's. Useful huh? Also on the subject of PC emulation, ***NFormat*** is a desk accessory that formats double sided floppies with an IBM boot sector (later versions of TOS should manage this anyway).





Monitor your disks with two useful programs - DOS tester (top) and DStat-X (below)

SIX TO GO!

Onto the final half dozen! ***N_Mentim*** stands for Menu Bar Time (not sure what the N's for) and its purpose is to show the current time and date in the accessories menu bar. ***SpeedMet*** is a German benchmarking program that works as both a desk accessory and GEM application. The documentation and dialogs are German but even so you shouldn't encounter any problems. SpeedMet runs one continuous test and updates a performance bar from 0 to 1200% - 100% being a normal ST (my STE ran consistently at almost 102%). ST_Init enables you to decide which desk accessories and auto programs should be loaded on boot up. Other selections include time and date, screen frequency (50 or 60hz) and resolution. ST_Init can handle up to 114 desk accessories and 38 programs in the AUTO folder - more than enough for most people! ***SureCopy*** is for TOS 1.4 (and above) programmers who use a RAM Disk. It helps to maintain development files in the RAM disk by presenting the ability to periodically back them up to disk. SureCopy organises the archive bits so that only modified files are copied, saving you time and confusion! ***WinXV*** increases the number of GEM windows that other programs can open and last but not least, as they say, is Zoom. ***Zoom*** allows mono users to zoom in on a small part of the screen surrounding the mouse pointer. The magnified image updates as you move the pointer.

That it's - Thirty Useful Utilities!

UPDATES

Before you disappear a brief reminder about the new arrangements for obtaining Page 6 Library updates. These are no longer enclosed with the magazine but are mailed separately to those people who have asked to receive them. You can register free of charge for the regular update service or alternatively join the Page 6 ST Club to obtain generous discounts, free disks and other extras. Ask Page 6 for full details.

HOW TO GET THEM

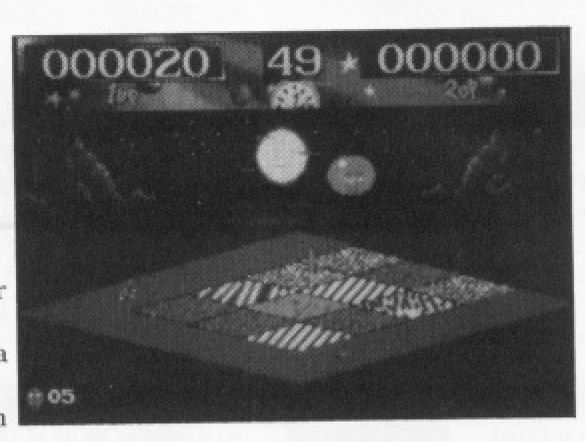
The disks featured in PD World can be obtained from the PAGE 6 ST library. When referring to a specific disk, please use the unique reference code for identification. A printed catalogue describing all the library disks in detail is available from PAGE 6 at a cost of £1.95, refundable against the first few disks ordered. This includes a copy of THE PAGE 6 CATALOG DISK, which is otherwise priced at £1. The disk featured this issue is:

ST633 - 30 USEFUL UTILITIES

Prices for standard disks are £2.95 each or £2.50 each for five or more but prices are lower for members of the PAGE 6 ST Club

Write to PAGE 6, P.O. Box 54, Stafford, ST16 1DR
Telephone 0785 213928 or FAX 0785 54355 with credit card orders

MANIX



Manix is a game which has many similarities to Marble Madness but also adds a little extra.

The game centres around a globule like creature named Filbert who seems to spend his life bouncing around attempting to maintain some form of pattern to the landscape. He does this by landing on various squares about multitudinous maps hoping to restore the balance before some unpleasant events or creatures catch up with him. Each level starts with the scenery as it ought to be and then grenades drop disrupting the symmetry of the board.

Once this initial intrusion has finished it becomes a race between Filbert and the fused grenades to clear the continent. In a somewhat greedy manner Filbert eats unexploded bombs ... I suppose this is what provides him with the bounce factor he needs.

The playing area resembles a chequered table with some pretensions to a 3D display. The control of the hero is sometimes a little less than natural since the player needs to think in a 3D sort of manner which means that joystick commands do not lead to the places one may expect.

The game does have some fairly unique qualities which makes it far more challenging. It is certainly an action game which requires swift reactions and also fast thought on the part of the gamester. By far the best point about the game is the two player option which offers many levels of challenge not the least of which is completing the level while an opponent and a computer make life difficult for you.

Your opponent plays another bubble character known as Bulbous Bilco and the object of the challenge is to have more of the islands squares converted to your colour than your opponent manages.

If you should manage to complete all the levels on the disk there is even a course editor included that will enliven the game further. This, together with several devilishly amusing obstacles, makes the game quite addictive. Once the initial problem with controlling the bubble is resolved the whole experience becomes most challenging. For a budget game it is extremely good value and the age of the game is hardly noticeable.

FACTS

Title: **MANIX**
Publisher: **Raze**
Price: **£7.99p**
Reviewer: **Damon Howarth**

SIGHT & SOUND

Friendly but idiosyncratic, nice to have a good 2 player option

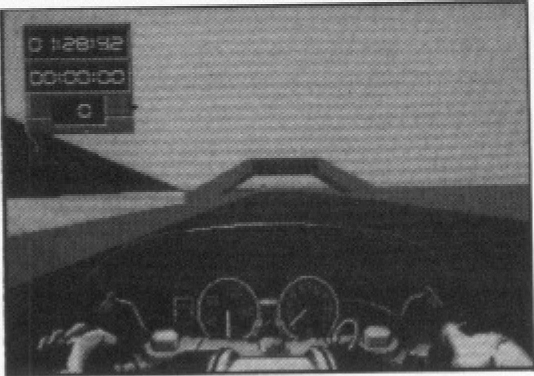
GAMEPLAY

Although not the up to the minute music quite adequate fx and strong sprites

VERDICT

A very good budget buy and one I recommend

TEAM SUZUKI



Team Suzuki is a motor bike racing game which plays from over the handle bar perspective. Most players of games will be used to the car racing format and this is really quite similar, that is until the game is studied. Being an ex "biker", I am all too aware of the occasional vagueness of the rear wheel on higher speed "Suzis" and this simulation is very accurate here. The bike handles in a most realistic way even so far as preferring certain types of bend to others.

The programmers have gone to a great deal of trouble to arrange a feeling of oneness with the bike and that, together with the initial perspective, allowed me to wallow in nostalgic oil filled glee. The game charts the players progress through various stages of the grand prix season and does it in smooth rolling graphics of the more realistic filled polygon type. So concerned are the writers of this piece that they offer smoothness versus realism choices. You can have the somewhat jerky riders on all bikes and a dashboard option or the no riders no dashboard smooth version or the half way type which produces the smooth scroll that is necessary to enjoy the game.

The screen also manages some of the judder found when bikes are just missing the sweet spot. The sound effects give an authentic roar and maintain the belief that the player is using a big fast bike. There are though some flaws to the simulation, accidents tend only to leave damage to the bike and do not send you flying and I wondered occasionally if my trusty metal steed had been fitted with training wheels?

This game also provides various views of the bike during the race including zoom modes and the view from TV cameras. Of most use though is the look over the shoulder switch from the space bar. I was disappointed to find that there was no keyboard control for the bike.

The only options I had were mouse or joystick. Now while a mouse recreates the steering wheel fairly well a keyboard makes more sense for a quick to respond bike.

On the whole though a good game and well worth playing.

FACTS

Title: **TEAM SUZUKI**
Publisher: **Gremlin Graphics**
Price: **£7.99**
Reviewer: **Damon Howarth**

SIGHT & SOUND

Well implemented, strong effects add to the realism mode, smooth scrolling is a pleasure

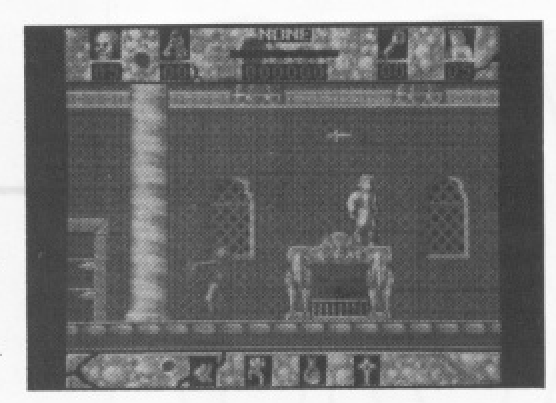
GAMEPLAY

Solid and well designed, just a shame there was no keyboard control

VERDICT

A good budget buy

HORROR ZOMBIES FROM THE CRYPT



There would seem to be a move in the budget market to provide interesting and playable games that seemed to have missed public attention the first time round. Horror Zombies is certainly in this mode and presents a platform game that lovingly recreates the Bela Lugosi horror show with very playable attributes.

The booting system itself shows attention to detail, with a poster straight from fifties Hammer with Zombies and screaming wenches through to the opening credits in the cinema. The X certificate at the beginning is not entirely misplaced although the violence is minor. The music has the heavy timbre associated with the genre and adds strongly to the atmosphere.

The story centres around a disinherited Transylvanian count who is reclaiming his birthright. This entails entering the dread manor and discovering the terrible things that still inhabit the Maison Horrible. The foolhardy aristocrat is controlled by joystick and needs to leap and grab his way past all the favourite monsters of Hollywood. It seemed at the beginning of the game that there was a no go region and that the monster always hit and kill you but just bear in mind that the zombies are mindless and will only walk where they are programmed to.

As the game progresses it becomes necessary to find keys and skulls to enable new levels to be accessed. Many of the problems need timing and the use of the bonus items are essential at many points. The most useful things seem to be boots for sneaking around since they hide you from aggressive monsters that you would have no other defence against. The vision of the sprite tiptoeing its way past Cthulloid frogs is most amusing and is obviously inspired by Abbot & Costello meet ... movies. Should you manage to come to grief at the hand of one of these dreadful creatures the gory death scene at the end is worth seeing and ranks up there with Barbarian. The game is progressively challenging and seems a good escapade for fans of the old horror style of movie.

I enjoyed the game and kept coming back for just one more try. I'm sure there is a way past those werewolves!

ST File

FACTS

Title:	HORROR ZOMBIES FROM THE CRYPT
Publisher:	Gremlin Graphics
Price:	£7.99
Reviewer:	Damon Howarth

SIGHT & SOUND

The sound is most evocative of the movies while the graphics seem to be a port from the PC 16 colour mode, strange but good

GAMEPLAY

Smooth with big sprites, sometimes a little frustrating

VERDICT

A strong budget game with much to recommend it

VIDEO KID



FACTS

Title:	VIDEO KID
Publisher:	Gremlin Graphics
Price:	£25.99
Reviewer:	Damon Howarth

SIGHT & SOUND

Both have excellent graphics and well spotted effects

GAMEPLAY

Everything is there but the atmosphere, Kid Gloves is fine and smooth

VERDICT

This is worth it for Kid Gloves - Video Kid is somewhat run of the mill

This is a full price Gremlin game that shows a great deal of pedigree. The story behind this is commendably short and involves Billy (the video kid of the title) settling down to watch the new family video and his being sucked into the workings. His task is to escape by making his way through five different areas of video defeating monsters and end of level guardians as he goes.

The kid is a green haired version of Dennis the Menace and appears in cartoon cutey mode throughout the game. He has various outfits for the various levels and seems to be moving on a continuous conveyor belt. As with all such seek and destroy games there are bonuses to be gained and lots of obstacles to dodge. The peculiar screen scrolling and sometime lack of total control of the hero is probably attributable to the fact he is meant to be in a video that is continually running.

Graphically the game is appealing with plenty of colour and lively monsters but somehow there does not seem to be the novelty and 'lets try again' features that I would have expected in such a work.

I find it very hard to pin down just what it is about the game that stops me from a full fledged WOW!, but it generally feels to lack that touch of charisma and zest that the package promises. Perhaps the problem is the lack of control over the events that occur and the fact that there is no going back that leaves me feeling as though I have played the gaming equivalent of a one armed bandit I don't know.

Gremlin themselves may not be too convinced about the game since they offer the free budget game Kid gloves with it. Kid gloves is a platform game that has, to my mind, better play and sound and a far better game concept. This is a game a little in the Bomb Jack mould with well coloured and well controlled graphics and a plot line that makes sense. The game has many similarities to its stable mate but somehow carries it off better. I actually wanted to keep trying with Kid Gloves as he fought his way across screenfuls of exotic locations looking for ways around problems. Maybe they should bill Video Kid as free with Kid Gloves??

THE STOS COLUMN

All is quiet on the STOS front but Dion Guy brings you a neat little type-in listing

After the release of STOS 3D, I thought that we would be treated to a fresh supply of STOS products - such as the long awaited STOS Vidi and STOS Musician. But what happens? The STOS scene has gone totally quiet again. Something to think about - STOS Vidi was mentioned in issue 41 of New Atari User, which came out on the 23rd of November 1989! STOS Musician is just as bad, having been mentioned in the following issue. STOS Vidi was promised for Spring 1990 and STOS Musician was said to have been "totally rewritten since news of its release broke in November (1989)" but still did not have "a positive release date" (quotes from issue 44 of New Atari User). So for two and a half years we have been waiting for these wonder products without a peep from either Mandarin (now Europress) or Shadow software. I have not been told anything about these two packages, and have not seen them mentioned anywhere since issue 48 of New Atari User (released on the 24th of January 1991). It's not as though STOS's popularity has faded either - have you seen the number of new PD games and utilities that are written in STOS? So, the onus is on the aforementioned companies - *GET YOUR ACT TOGETHER AND START SUPPORTING STOS AGAIN!*

THE LISTING!

Onto this issues main feature, the listing! As you can see, it is quite a big one this time - but I think you'll find it's well worth typing it in. The listing is a game called Enemy Fleet which is based on that old classic - Battleships. Of course, the really good thing about Enemy Fleet is that there are no massive memory banks to type in - it doesn't require any sprites!

ENEMY FLEET

The game is very simple to play. The aim is to destroy your opponent's (in this case, the computer) fleet of battleships by dropping bombs onto where you think they are. Your opponent will likewise try to do the same to you. You each start with 6 ships, and each ship is capable of launching 4 bombs. When you start the game you have to position your fleet where you want them, on a grid representing an ocean. Each ship is represented by 4 coloured squares. The first ship will appear in the centre of the 24x24 grid and can be moved around by using the cursor keys. Press space to confirm where you want the ship to be and the next one will then appear. Repeat this process until you have placed all 6 ships and then you are ready to play. Once you have placed your ships the screen will switch to the bombing screen. Here you can use the mouse to choose where you want the bombs to go (on the grid). To choose a square simply point at it and press the left mouse button. The bomb is represented by a small white circle inside the square. Don't worry about bombing your own ships - this is not possible. On the right hand side of the screen is a panel - this is the status panel. This tells you what the condition of each of your ships is (which could be "O.k", "Damaged" or "Sunk"). Once you have finished (you start with 24 bombs) the screen will switch to the detonation screen, where you can see if your bombs have found a ship or not. If a bomb does find a ship, the part of the ship it has hit will be revealed (each ship takes 4 bombs to be destroyed). If it does not, the bomb will turn grey to indicate it is a miss (and also to stop you dropping a bomb on the same square twice). For each ship destroyed you lose the use of 4 bombs per turn. After you have had your turn the computer will try to destroy your fleet by using the same methods. The game continues until one side destroys all 6 of the opponents ships. And there you have it!

ADIEU

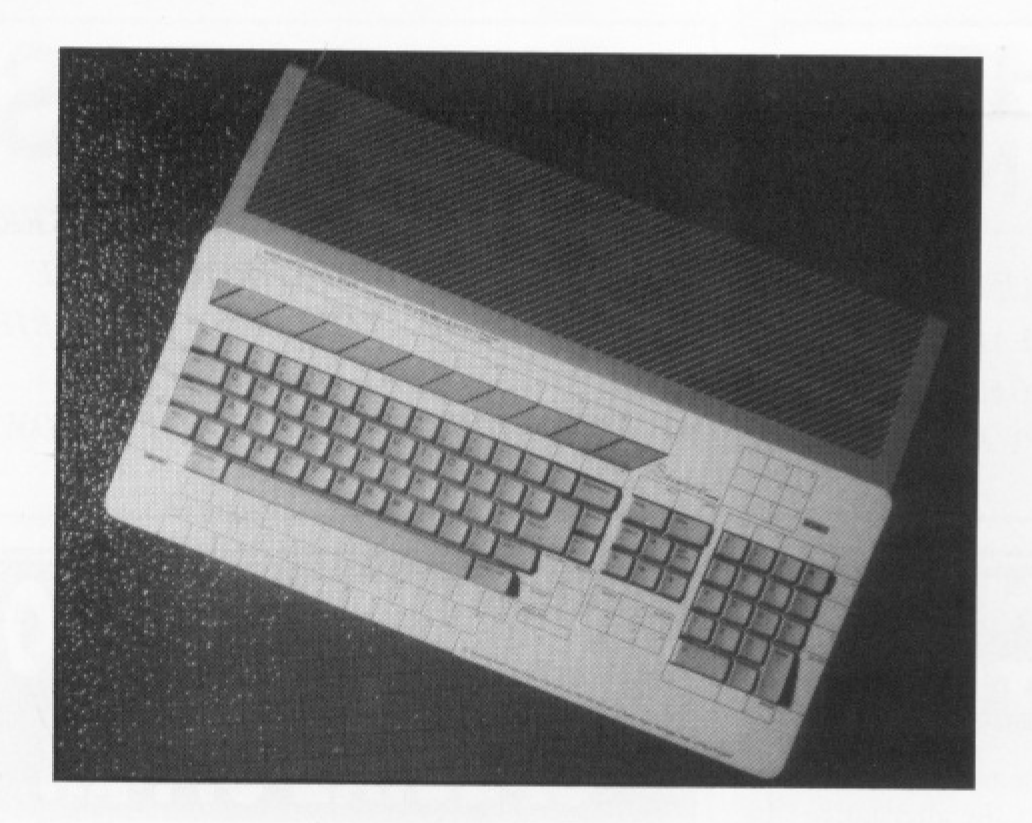
Now look, before I go this time I'm not going to start begging for you to send in material to publish. Well, maybe just a bit - please, please, please send in some stuff! If you've written a program that you want reviewing, or a listing you want to share with the world - send it in! Send any STOS related bit's n' bob's you may have lying around to the following address. See you next time!

Dion Guy,
STOS COLUMN
11 Shore Crescent
Bishops Waltham
Hants
SO3 1DZ

```
10 rem SCREEN + VARIABLE SETUP
20 dim GRID(23,23),ST(12)
30 mode 0 : key off : hide on : click off
40 palette $0,$777,$0,$0,$770,$430,$450,$444,$333,$555,$700,$70,$7,$770,$77,$707
50 windopen 1,0,0,40,12,0,3 : curs off
60 home : pen 13 : centre "ENEMY FLEET" : pen 1
70 locate 0,2 : centre "By Dion Guy"
80 locate 0,4 : centre "For the STOS Column"
90 locate 0,6 : centre "Press any key to start"
100 def scroll 1,0,0 to 320,199,0,1 : def scroll 2,0,0 to 320,199,0,-1 : clear
key
110 for A=0 to 80 : wait vbl : scroll 1
120 if inkey$<>"" then goto 180
130 next A
140 for A=0 to 80 : wait vbl : scroll 2
150 if inkey$<>"" then goto 180
160 next A
170 goto 110
180 cls
190 for A=0 to 24
200 draw 0,A*8 to 192,A*8 : draw A*8,0 to A*8,192
210 next A
220 rbox 216,0 to 312,192
230 C=0 : for A=48 to 168 step 24 : ink 10+C : bar 224,A to 240,A+16 : inc C :
next A : reserve as screen 6 : screen copy physic to 6
240 locate 29,1 : print "Position" : locate 28,3 : print "your fleet"
250 reserve as screen 5 : screen copy physic to 5
260 BSN=1
270 rem POSITIONING YOUR FLEET
280 X=11 : Y=11 : if BSN=7 then goto 440
290 repeat
300 K$=inkey$ : SC=scancode
310 if SC=75 and X>0 then dec X
320 if SC=77 and X<22 then inc X
330 if SC=72 and Y>0 then dec Y
340 if SC=80 and Y<22 then inc Y
350 if X<>X2 or Y<>Y2 then goto 410
360 if K$=chr$(32) then goto 380
370 until true=false
380 if GRID(X,Y)<>0 or GRID(X+1,Y)<>0 or GRID(X,Y+1)<>0 or GRID(X+1,Y+1)<>0 then
bell : goto 290
390 GRID(X,Y)=BSN : GRID(X+1,Y)=BSN : GRID(X,Y+1)=BSN : GRID(X+1,Y+1)=BSN
400 locate 31,4+(BSN*3) : print "Done" : screen copy physic to 5 : inc BSN :
wait 10 : X2=0 : Y2=0 : goto 280
410 screen copy 5 to physic,0,0 : screen copy 5 to back : ink 9+BSN : bar
X*8,Y*8 to X*8+16,Y*8+16
420 X2=X : Y2=Y
430 goto 290
440 rem COMPUTER'S POSITIONING OF FLEET
450 for A=1 to 6
460 X=rnd(22) : Y=rnd(22)
470 if GRID(X,Y)=0 and GRID(X+1,Y)=0 and GRID(X,Y+1)=0 and GRID(X+1,Y+1)=0 then
GRID(X,Y)=6+A : GRID(X+1,Y)=6+A : GRID(X,Y+1)=6+A : GRID(X+1,Y+1)=6+A else goto
460
480 next A
490 goto 500
500 rem PLACE YOUR BOMBS
510 BN=24-(YSS*4)
520 fade 10 : wait 75 : cls
530 change mouse 2 : limit mouse 0,0 to 191,191
540 screen copy 6+SET to physic : screen copy 6+SET to back : EN=0 : gosub 1020
: fade 10 to 6 : wait 75
550 show on
560 locate 28,1 : print "Place your" : DP=1 : gosub 610
570 ink 1 : for A=1 to BN
580 repeat : X=x mouse/8 : Y=y mouse/8 : until mouse key=1
590 if point(X*8+4,Y*8+4)=0 then rbar X*8,Y*8 to X*8+8,Y*8+8 : dec BN : goto 610
600 goto 580
610 BN$=str$(BN) : BN$=BN$-chr$(32)
620 if len(BN$)=1 then BN$="0"+BN$
630 locate 28,3 : print "bombs (";BN$;")" : if DP=1 then DP=0 : return
640 next A
```

continued

```
650 hide on : fade 10 : wait 75
660 ink 0 : bar 224,8 to 304,32 : locate 28,1 : print "Bombs away"
670 fade 10 to 6 : wait 75
680 rem IS THERE A HIT ON ENEMY FLEET?
690 for B=0 to 23 : for A=0 to 23
700 if point(A*8+4,B*8+4)=1 then ink 10 : box A*8,B*8 to A*8+8,B*8+8 : ink 8 :
rbar A*8,B*8 to A*8+8,B*8+8 : goto 710 else goto 730
710 if GRID(A,B)>6 then ink 9+(GRID(A,B)-6) : bar A*8,B*8 to A*8+8,B*8+8 : boom
: locate 31,3 : print "HIT!" : inc ST(GRID(A,B)) : wait 35 : if ST(GRID(A,B))=4
then inc ESS : goto 730 else goto 730
720 bell : locate 31,3 : print "MISS" : wait 35 : ink 1 : box A*8,B*8 to
A*8+8,B*8+8
730 locate 31,3 : print space$(4) : next A : next B : if ESS=6 then goto 1090
740 if SET=0 then reserve as screen 7 : SET=1
750 locate 28,1 : print space$(10) : screen copy physic to 7
760 fade 10 : wait 75
770 cls : screen copy 6+SET2 to physic : screen copy 6+SET2 to back : ink 0 :
bar 224,8 to 304,32 : locate 28,1 : print "Computer's" : locate 31,3 : print
"turn" : EN=6 : gosub 1020
780 fade 10 to 6 : wait 75
790 rem COMPUTER'S TURN TO PLACE BOMBS
800 CBN=24-(ESS*4) : for B=0 to 23 : for A=0 to 23 : P=point(A*8+4,B*8+4) : if
P<10 then goto 860
810 if P>=10 then if ST(P-9)=4 then goto 860
820 for D=B-1 to B+1 : for C=A-1 to A+1
830 if C<0 or D<0 or C>23 or D>23 then goto 850
840 if point(C*8+4,D*8+4)=0 then ink 1 : rbar C*8,D*8 to C*8+8,D*8+8 : dec CBN :
wait 35 : if CBN=0 then goto 920
850 next C : next D
860 next A : next B
870 for A=1 to CBN
880 X=rnd(23) : Y=rnd(23)
890 if point(X*8+4,Y*8+4)=0 then ink 1 : rbar X*8,Y*8 to X*8+8,Y*8+8 else goto
880
900 wait 35 : next A
910 rem HAS COMPUTER HIT YOUR FLEET?
920 fade 10 : wait 75 : ink 0 : bar 224,8 to 304,32 : locate 28,1 : print "Bombs
away" : fade 10 to 6 : wait 75
930 for B=0 to 23 : for A=0 to 23
940 if point(A*8+4,B*8+4)=1 then ink 10 : box A*8,B*8 to A*8+8,B*8+8 : ink 8 :
rbar A*8,B*8 to A*8+8,B*8+8 : goto 950 else goto 970
950 if GRID(A,B)>0 and GRID(A,B)<7 then ink 9+GRID(A,B) : bar A*8,B*8 to
A*8+8,B*8+8 : boom : locate 31,3 : print "HIT!" : inc ST(GRID(A,B)) : wait 35 :
if ST(GRID(A,B))=4 then inc YSS : goto 970 else goto 970
960 bell : locate 31,3 : print "MISS" : wait 35 : ink 1 : box A*8,B*8 to
A*8+8,B*8+8
970 locate 31,3 : print space$(4) : next A : next B : if YSS=6 then goto 1090
980 if SET2=0 then SET2=2 : reserve as screen 8
990 screen copy physic to 8
1000 goto 500
1010 end
1020 rem STATUS DISPLAY
1030 for A=7 to 22 step 3 : locate 31,A
1040 if ST(((A-4)/3)+EN)=0 then print "O.k";space$(4)
1050 if ST(((A-4)/3)+EN)>0 and ST(((A-4)/3)+EN)<4 then print "Damaged"
1060 if ST(((A-4)/3)+EN)=4 then print "Sunk";space$(3)
1070 next A
1080 return
1090 rem END GAME ROUTINE
1100 if ESS=6 then W$="PLAYER 1" else W$="COMPUTER"
1110 hide on : fade 10 : wait 75 : cls : fade 10 to 6
1120 windopen 1,0,0,40,12,0,3 : scroll off : curs off
1130 def scroll 1,0,96 to 320,128,-16,0
1140 home : centre W$+" has destroyed"
1150 locate 0,2 : centre "the enemy fleet!"
1160 locate 0,11 : centre "Press any key to restart"
1170 pen 4 : locate 0,6 : centre "Well Done!" : locate 0,7 : centre "!enoD lleW"
1180 clear key : repeat : wait vbl : scroll 1 : screen copy physic,0,96,16,128
to physic,304,96 : until inkey$<>""
1190 for A=0 to 23 : for B=0 to 23 : GRID(A,B)=0 : next B : next A : for A=0 to
12 : ST(A)=0 : next A
1200 YSS=0 : ESS=0 : SET=0 : SET2=0 : for A=5 to 8 : erase A : next A : goto 180
```



John Davison discovers a very handy product that makes it much easier to use many different programs

ATARI KEYBOARD OVERLAYS

How many times have you bought a program for your ST and found that it's far more complex to use than you thought, with dozens of key commands to remember? Sometimes the program designer seems to have taken a devilish delight in allocating commands to keys in a totally non-intuitive way too, so you can't even use the letters on the keys as mnemonics to remind you which key does what. Also, different programs of the same type often seem to use completely different keys for the same functions - in my case flight simulation programs are the chief offenders here. The result is at best confusion, or at worst a lot of frustration and wasted time as you wade through the instruction manuals trying to find the correct key to press. I usually end up building a "crib sheet" for each program listing all the commands I normally use, but now Silverbird Computing have come up with a much more elegant solution.

Silverbird's Atari Keyboard Overlay is a piece of good quality cartridge board measuring about 19 inches by 8 inches, which has been accurately die-cut to fit precisely over and around the keyboard of an ST, STE, Mega ST, or TT. It's marked out round the edge with boxes representing the keys, so all you have to do is write the command triggered by each key in the appropriate box. And that's really all there is to it!

For complex programs it's probably better to do a bit of planning beforehand, and lightly write in the commands in pencil until you're sure you've put everything in its rightful place. This is particularly important if using a program that uses Shift, Alt, and Ctrl key combinations, or where the same key has different meanings depending on which menu you happen to be in at the time. You'd then have to write several commands in each box, which could get a little messy. However, Silverbird have thoughtfully provided an instruction sheet with each pack of overlays which suggests how you might tackle this problem.

Then when all the commands are pencilled in you'd probably want to run a test using the overlay with its program to prove everything is where it should be. When you're happy it's all been accurately transcribed you can neatly ink everything in to make it permanent and easier to read.

Silverbird Computing have come up with a very useful accessory here - it's simple, it's elegant, and it works! You can use it with virtually any type of program, but you'll find it particularly helpful with all those complicated flight simulators, word processors, DTP programs, and music related software. I'm now busily making overlays for all my favourite programs, such as Flight Simulator 2, ProFlight, Timeworks 2, Band-In-A-Box, and Notator (that's right, I just couldn't resist buying Notator after reviewing it a few issues back!).

There's not much more I can say about this product, except to point you at the supplier. The overlays are sold in packs of five for £5.20 plus postage and are obtainable from Silverbird Computing, 47 Barton Road, Harlington, Beds. LU5 6LG. Current postage rates are 80p in the UK, £1.50 for Europe, and £2.50 for the rest of the world. Also, please note that you can't pay by credit card - you have to send a cheque, postal order, etc., with your order. If you have any queries phone Silverbird on 05255-2614 for more details - I'm sure they'll be delighted to help.

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Reviewed by John S Davison

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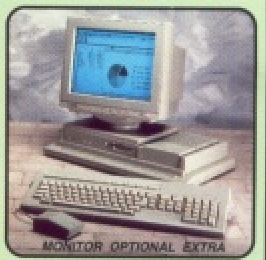
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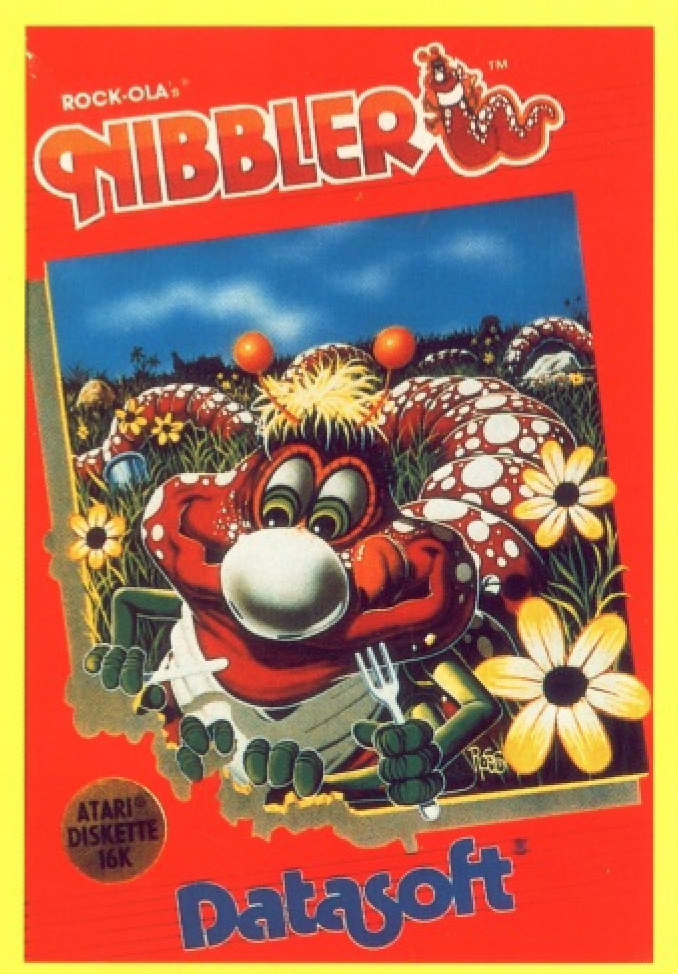
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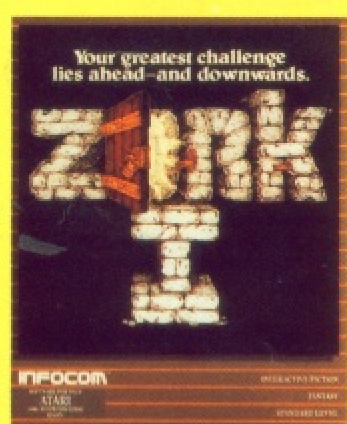
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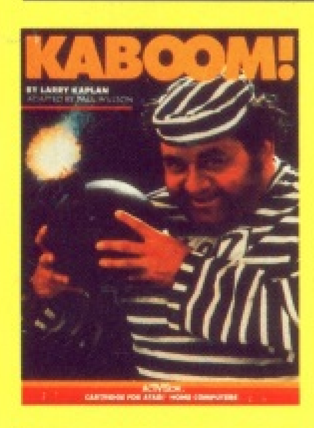


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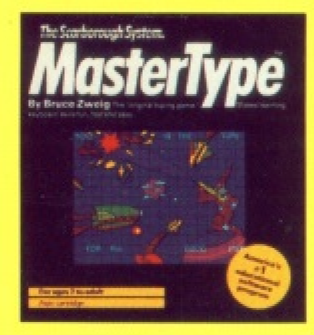


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Challenge the Mad Bomber as he tries to bomb you out of sight. Can you catch his bombs and dowse them in time? Or would you like to be the Mad Bomber and try to flatten one of your friends? Lots of excitement for one or two players in this addictive arcade game that won awards for Best Audio and Visual Effects when it was first released. Simple yet addictive.

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MAXWELLS DEMON

Check out the review in Issue 49. Paul Rixon found this simple game to be quite addictive and at this price can you afford not to become addicted! It's a different type of game, more in the Tetris mould than an arcade game. It sure makes you think and the price won't break you if you don't get fully hooked.

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One of the most famous of platform games that has you jumping over fire, running over breadmills and bombs, climbing ladders, sliding down poles and more with some great graphics. Master all 22 screens if you can and then create your own for neverending fun. This is what platform games are all about.

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One of the all time classics for the Atari, Zaxxon set new standards when first issued and was copied many times. Pilot your craft across the unique 3 dimensional battlefield shooting enemy fuel tanks, anti-aircraft tanks and missiles before launching off through space for the ultimate conflict with a mighty robot - few have got this far! Zaxxon, often copied, never bettered and NEVER at this incredibly low price!

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